Docket	:	A.15-07-015
Exhibit Number	:	ORA - ____
Commissioner	:	Catherine Sandoval
Administrative Law Judge	:	Jeanne McKinney
ORA Witness	:	Victor Chan

OFFICE OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION

***** PUBLIC VERSION (redacted) *****

REPORT ON PLANT - CUSTOMER SUPPORT SERVICES (CSS)

California Water Service Company
Test Year 2017 General Rate Case
A.15-07-015

San Francisco, California
March 2016

MEMORANDUM

This Report on Plant – Customer Support Services (CSS) for California Water Service Company GRC A.15-07-015 is prepared by Victor Chan of the *Office of Ratepayer Advocates (ORA) - Water Branch,* and under the general supervision of Program Manager Danilo Sanchez, and Program & Project Supervisors Lisa Bilir and Ting-Pong Yuen. Mr. Chan's Statement of Qualifications is in Chapter 7 of ORA's Company-Wide Report on Results of Operations. Kerriann Sheppard and Christa Salo serve as ORA legal counsels.

Report on Plant - Customer Support Services (CSS)

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Chapter 1: EXECUTIVE SUMMARY

A. INTRODUCTION

This report presents ORA's analysis and recommendations on Plant in Service for the Customer Support Services (CSS), formerly called General Office (GO), in General Rate Case Application (A.) 15-07-015 filed by California Water Service Company (Cal Water or CWS).

B. RECOMMENDATIONS

ORA recommends plant additions of $9.9 million, or 49% of CWS's request in 2016, $2.2 million, or 19% in 2017 and $5.2 million, or 19% in 2018 as shown in Table 2-A. The average annual capital expenditure of $6.6 million recommended by ORA represents approximately 62% of CWS's average expenditure of $10.5 million in the past 5 years, 2009 to 2014, as shown in Table 1-A. Some of the significant projects that ORA recommended to disallow or adjust included the followings:

2016

- Project 99378, PowerPlan Upgrade ($1.5 million)
- Project 99030, Portable Booster Pump Replacement ($1.7 million)

2017

- Project 100031, Hyperion Software Upgrade ($1.6 million)
- Project 99778, Water Quality Laboratory Workspace Improvement ($2.2 million)

2018

- Project 99457, Customer Care and Billing System- Phase II ($2.1 million)
- Project 99272, CSS SCADA System Replacement Project ($4.7 million)

As discussed in more details in Chapter 2, ORA made significant adjustment to CWS's capital addition request due to its lack of a detail cost benefit analysis needed to demonstrate that each project will provide quantifiable level of benefit to CWS's ratepayers within a reasonable time frame. ORA also made adjustments to CWS's capital

budget under the non-specific category, which is being discussed as part of the common issues in ORA's Report on Plant – Common Issues.

Chapter 2 of this report presents detailed CSS/GO plant analysis and recommendations.

Table 1-A: Capital Budget Summary – Customer Support Services

	2015	2016	2017	2018	Annual Average	% of Recorded
2009-2014 Recorded	--	--	--	--	$ 10,574.1	100%
ORA	$ 8,981.9	$ 9,972.8	$ 2,186.6	$ 5,216.2	$ 6,589.4	62%
CWS	$ 31,701.0	$ 20,536.9	$ 11,769.4	$ 26,829.2	$ 22,709.1	215%

Chapter 2: PLANT – CUSTOMER SUPPORT SERVICES (CSS)

A. INTRODUCTION

This chapter presents ORA's analyses and recommendations for Plant in Service for CWS's Customer Support Services/General Office (CSS/GO).

B. SUMMARY OF RECOMMENDATIONS

Based on ORA's review and analysis of CWS's requested plant additions, ORA recommends disallowance adjustment, deferral or Advice Letter treatment where appropriate. These recommendations form the basis of ORA's recommended capital budget summary presented in **Table 2-A** below. ORA's estimated plant additions also reflect recommendations in its Common Plant Issues testimony regarding vehicle replacement, non-specific projects for 2016 to 2018 and requested 2015 capital projects. **Table 2-B** presents ORA project-specific adjustments.

Table 2-A: Capital Budget Summary – Customer Support Services

($000)	2015	2016	2017	2018	Annual Average
ORA	$ 8,981.9	$ 9,972.8	$ 2,186.6	$ 5,216.2	$ 6,589.4
CWS	$ 31,701.0	$ 20,536.9	$ 11,769.4	$ 26,829.2	$ 22,709.1
CWS > ORA	$ 22,719.1	$ 10,564.1	$ 9,582.8	$ 21,613.0	$ 16,119.8
ORA as % of CWS	28%	49%	19%	19%	29%

Table 2-B: Capital Budget Details – Customer Support Services

	2016 Capital Project					
2016	Project ID	Project Description	ORA	CWS	CWS>ORA	ORA/CWS
	69930	Distribution Map Upgrade from CAD to GIS	$ 435,959.00	$ 435,959.00	$ -	100%
	97777	Annual Routine Personal Computer Replacement Program	$ 264,714.40	$ 330,893.00	$ 66,178.60	80%
	98644	Replacement Gas Chromatograph/Mass Spectrometer	$ -	$ 180,565.00	$ 180,565.00	0%
	98685	Replacement Gas Chromatograph/Mass Spectrometer	$ -	$ 180,565.00	$ 180,565.00	0%
	99030	Comply with CARB Air Quality Regulations	$ -	$ 1,745,166.00	$ 1,745,166.00	0%
	99136	Vehicle Replacements> 120,000 miles	$ 548,510.00	$ 708,037.00	$ 159,527.00	77%
	99348	PowerPlan Upgrade- Add Depreciation Forecasting Module	$ -	$ 223,363.00	$ 223,363.00	0%
	99378	PowerPlan Version Upgrade	$ 650,682.00	$ 1,519,244.00	$ 868,562.00	43%
	99379	PowerPlan Upgrade- Add Property Tax Module	$ -	$ 114,203.00	$ 114,203.00	0%
	99383	PowerPlan Upgrade- Add Deferred Tax Module	$ -	$ 539,005.00	$ 539,005.00	0%
	99400	PowerPlan Human Resources Module Version Upgrade	$ 1,365,812.00	$ 1,365,812.00	$ -	100%
	99423	Upgrade Elevator to Comply with Current Industry Standards	$ 180,318.00	$ 180,318.00	$ -	100%
	99424	Install On Site Fire Protection at CSS Campus	$ 276,317.00	$ 276,317.00	$ -	100%
	99428	Additional Working Space at CSS	$ -	$ 393,984.00	$ 393,984.00	0%
	99475	Data Loss Prevention Software	$ 249,208.00	$ 249,208.00	$ -	100%
	101760	Install Security Cameras on CSS Campus	$ -	$ 495,379.00	$ 495,379.00	0%
	102647	Network Hardware Enhancement	$ 398,817.00	$ 398,817.00	$ -	100%
	98148	Tools for Repair, Maintenance and Construction Facilities	$ -	$ 44,799.33	$ 44,799.33	0%
	98151	Enhance Accuracy and Credibility of Geographical Field Work	$ 17,608.00	$ 23,466.98	$ 5,858.98	75%
	98170	Vibration Analyzer	$ -	$ 17,482.40	$ 17,482.40	0%
	98210	Ultrasonic Flowmeters	$ -	$ 33,872.12	$ 33,872.12	0%
	98216	Power Quality Analyzer	$ -	$ 13,111.92	$ 13,111.92	0%
	98231	Infared Camera	$ -	$ 13,111.92	$ 13,111.92	0%
	98250	HART Calibrator	$ -	$ 8,741.20	$ 8,741.20	0%
	98542	Conference Room Improvement (Torrance)	$ 39,879.00	$ 43,394.00	$ 3,515.00	92%
	98556	Purchase Flow, Pressure and Control Valve Equipment	$ 49,262.00	$ 55,544.96	$ 6,282.96	89%
	98597	Portable Well Level Transducer	$ 7,740.00	$ 7,739.53	$ (0.47)	100%
	98655	Additional AutoCAD software for new employee	$ 14,247.00	$ 14,247.32	$ 0.32	100%
	98757	Leak Detection Correlators	$ -	$ 89,148.78	$ 89,148.78	0%
	98766	Tools for New EMT	$ -	$ 32,779.44	$ 32,779.44	0%
	99303	Purchase New Envelope Printer for IT	$ 21,853.00	$ 21,853.00	$ -	100%
	99306	Postal Scale Replacement	$ 2,393.00	$ 8,741.20	$ 6,348.20	27%
	99308	Replacement of Table Top Inserter	$ 19,668.00	$ 19,667.76	$ (0.24)	100%
	99311	Replacement of Black/White Copier in IT	$ 43,706.00	$ 43,706.00	$ -	100%
	99360	Overhaul of Existing Plotter	$ 3,824.00	$ 3,824.28	$ 0.28	100%
	99384	Ovhaul Exisiting Plotter	$ 43,706.00	$ 43,706.00	$ -	100%
	99385	Purchase Tools for Traveling Mechanics	$ 5,463.00	$ 5,463.16	$ 0.16	100%
	99387	Deploy Single Treasury Management Platform	$ 57,784.00	$ 57,784.46	$ 0.46	100%
	99418	Pool Vehicle for Corporate Communications Staff	$ -	$ 38,242.82	$ 38,242.82	0%
	99422	Maximize Facility Management at GO	$ -	$ 24,164.38	$ 24,164.38	0%
	99425	Replace HVAC Units	$ 97,582.00	$ 97,582.08	$ 0.08	100%
	99489	Centrally Managed Tool for Keys	$ -	$ 52,531.28	$ 52,531.28	0%
	99534	Tools to Manage MSDS	$ 31,519.00	$ 31,518.72	$ (0.28)	100%
	99679	Replace WQ Copier	$ -	$ 34,842.44	$ 34,842.44	0%
	99961	Replacement of Vehicle	$ -	$ 38,242.82	$ 38,242.82	0%
	100038	Updating Surveying Equipment	$ 41,706.00	$ 41,706.44	$ 0.44	100%
Specifics Total			$ 4,868,277.40	$ 10,293,251.74	$ 5,424,974.34	47%
2015 Projects Authorized from 2012 GRC				$ 3,594,917.00		
Non-Specifics Total			$ -	$ 1,544,200.00	$ 1,544,200.00	0%
Carry-Overs Total						
AL from 2012 GRC			$ 5,104,536.00	$ 5,104,536.00		
Total 2016			$ 9,972,813.40	$ 20,536,904.74	$ 6,969,174.34	49%

Note:
1. IT projects are highlighted.

2017 Capital Projects

2017	Project ID	Project Description	ORA	CWS	CWS>ORA	ORA/CWS
	97779	Annual Routine Personal Computer Replacement Program	$ 274,020.00	$ 342,525.00	$ 68,505.00	80%
	97781	Replacement of Video Conferencing Hardware	$ 190,920.00	$ 381,839.00	$ 190,919.00	50%
	97782	Knowledge and Information Management System	$ -	$ 818,437.00	$ 818,437.00	0%
	99137	Vehicle Replacement>120,000 Miles	$ 247,512.00	$ 671,980.00	$ 424,468.00	37%
	99377	Upgrade the Existing Invoice Document Management Software	$ 554,660.00	$ 554,660.00	$ -	100%
	99382	Supply Chain Management Software	$ -	$ 646,134.00	$ 646,134.00	0%
	99426	Replace Eight HVAC Units Per Year on GO Campus	$ -	$ 100,022.00	$ 100,022.00	0%
	99474	Increase Data Center Storage Capacity	$ 244,670.00	$ 244,670.00	$ -	100%
	99476	District Data Center Upgrade	$ 400,603.00	$ 400,603.00	$ -	100%
	99477	Intrusion Detection and Prevention System for Data Center	$ -	$ 344,605.00	$ 344,605.00	0%
	99778	Water Quality Laboratory Workspace Improvement	$ -	$ 2,214,906.00	$ 2,214,906.00	0%
	100031	Hyperion Software Version Upgrade	$ -	$ 1,615,336.00	$ 1,615,336.00	0%
	102021	PowerPlan Upgrade- Add Regulatory Module	$ -	$ 1,138,273.00	$ 1,138,273.00	0%
	102614	Network Hardware Enhancement	$ 111,997.00	$ 111,997.00	$ -	100%
	97780	Software for Personal Productivity Tools	$ -	$ 75,382.36	$ 75,382.36	0%
	98135	Tools for New EMT	$ -	$ 42,435.48	$ 42,435.48	0%
	98175	Vibration Analyzer	$ -	$ 17,919.44	$ 17,919.44	0%
	98211	Ultransonic Flowmeters	$ -	$ 34,718.97	$ 34,718.97	0%
	98221	Power Quality Analyzer	$ -	$ 13,439.64	$ 13,439.64	0%
	98238	Infrared Camera	$ -	$ 13,439.64	$ 13,439.64	0%
	98419	HART Calibrator	$ -	$ 8,959.72	$ 8,959.72	0%
	98598	Replacement of S.Cal Eng HP 1050C Plotter	$ 39,327.00	$ 39,327.16	$ 0.16	100%
	98669	Additional AutoCAD Seat for New Employee	$ 14,604.00	$ 14,603.50	$ -	100%
	98767	Tools for New EMT	$ -	$ 33,599.04	$ 33,599.04	0%
	99301	New Paper Cutter for IT	$ 33,599.00	$ 33,599.04	$ 0.04	100%
	99310	Replacement of Folding Machine	$ 15,288.00	$ 27,999.20	$ 12,711.20	55%
	99386	Tools for Traveling Mechanics	$ 5,600.00	$ 5,599.83	$ (0.17)	100%
	99393	Software to Analyze Transactions	$ 53,845.00	$ 53,844.55	$ (0.45)	100%
	99459	Design and Enhanced CalwWater Website	$ -	$ 96,920.16	$ 96,920.16	0%
Specifics Total			$ 2,186,645.00	$ 10,097,774.73	$ 7,911,129.73	22%
Non-Specifics Total			$ -	$ 1,580,800.00	$ 1,580,800.00	0%
Carry-Overs Total				$ 90,800.00		
Total 2017			$ 2,186,645.00	$ 11,769,374.73	$ 9,582,729.73	19%

Note:
1. IT projects are highlighted.

	2018 Capital Project					
2018						
	Project ID	Project Description	ORA	CWS	CWS>ORA	ORA/CWS
	97783	Annual Routine Personal Computer Replacement Program	$ 292,350.40	$ 365,438.00	$ 73,087.60	80%
	97786	Replace CSS Phone System	$ 419,945.00	$ 839,889.00	$ 419,944.00	50%
	98551	Southern Cal Engineering Workspace Improvements	$ 124,005.00	$ 250,587.00	$ 126,582.00	49%
	98730	Replace Gas Chromatograph- MS/MS	$ -	$ 406,611.00	$ 406,611.00	0%
	98733	Replace Inductively Coupled Plasma (ICP) System	$ -	$ 102,558.00	$ 102,558.00	0%
	98944	Replace Ion Chromatograph	$ 110,901.00	$ 110,901.00	$ -	100%
	99049	Add Precise Service Mapping for GIS System	$ 560,896.00	$ 560,896.00	$ -	100%
	99138	Vehicle Replacements> 120,000 Miles	$ 611,809.00	$ 711,739.00	$ 99,930.00	86%
	99272	CSS SCADA System Replacement Project	$ -	$ 4,693,605.00	$ 4,693,605.00	0%
	99346	Enterprise Reporting and Analysis System	$ -	$ 1,103,813.00	$ 1,103,813.00	0%
	99395	Install Microwave Network	$ -	$ 1,229,524.00	$ 1,229,524.00	0%
	99427	Replace Eight HVAC Units per Year on GO Campus	$ 12,815.00	$ 102,522.00	$ 89,707.00	12%
	99440	Upgrade Customer Communication and Access System	$ -	$ 813,218.00	$ 813,218.00	0%
	99442	Meter Data Management System	$ 592,410.00	$ 592,410.00	$ -	100%
	99457	Customer Care and Billing System- Phase II	$ -	$ 2,154,219.00	$ 2,154,219.00	0%
	99461	Asset Refurb and Replace System	$ -	$ 721,663.00	$ 721,663.00	0%
	99464	GIS Design and Integration	$ -	$ 721,663.00	$ 721,663.00	0%
	99469	Implement Enterprise Water System Modeling Application	$ -	$ 996,326.00	$ 996,326.00	0%
	99471	Replace Laboratory Information Management (LIMS)	$ -	$ 1,130,965.00	$ 1,130,965.00	0%
	99472	Integrated Work and Workforce Management System	$ -	$ 2,692,774.00	$ 2,692,774.00	0%
	99482	Rates Compliance Software	$ -	$ 102,034.00	$ 102,034.00	0%
	99484	Upgrade Storage Area Network	$ 764,506.00	$ 764,506.00	$ -	100%
	99485	Update Software Versions	$ 1,131,408.00	$ 1,308,422.00	$ 177,014.00	86%
	99487	Implement Enhancements to the MS Project Server	$ -	$ 323,133.00	$ 323,133.00	0%
	101814	Companywide Digital Radio System	$ -	$ 1,643,307.00	$ 1,643,307.00	0%
	102616	Netwrok Hardware Enhancement	$ 470,666.00	$ 470,666.00	$ -	100%
	97784	Software for Personal Productivity Tools	$ 77,267.00	$ 77,266.84	$ (0.16)	100%
	98148	Tools for Repair, Maintenance and Construction Facilities	$ -	$ 44,799.33	$ 44,799.33	0%
	98179	Vibration Analyzer	$ -	$ 18,367.52	$ 18,367.52	0%
	98213	Ultrasonic Flowmeters	$ -	$ 35,586.93	$ 35,586.93	0%
	98223	Power Quality Analyzer	$ -	$ 13,775.52	$ 13,775.52	0%
	98240	Infrared Camera	$ -	$ 13,775.52	$ 13,775.52	0%
	98421	HART Calibrator	$ -	$ 9,183.74	$ 9,183.74	0%
	99027	Hydrogen Generator	$ 18,511.00	$ 18,510.96	$ (0.04)	100%
	99313	Replacement of FAX Machine for IT	$ 2,296.00	$ 2,295.88	$ (0.12)	100%
	99314	Replacement of Postal Meter	$ 20,663.00	$ 20,663.40	$ 0.40	100%
	99315	Replacement of "Tray Tag" Printer	$ -	$ 4,591.78	$ 4,591.78	0%
	99393	Tools for Traveling Meter Mechanics	$ 5,740.00	$ 5,739.87	$ (0.13)	100%
	98768	New EMT Tools	$ -	$ 34,439.00	$ 34,439.00	0%
Specifics Total			$ 5,216,188.40	$ 25,212,385.29	$ 19,996,196.89	21%
Non-Specifics Total			$ -	$ 1,616,800.00	$ 1,616,800.00	0%
Carry-Overs Total						
Total 2018			$ 5,216,188.40	$ 26,829,185.29	$ 21,612,996.89	19%

Note:
1. IT projects are highlighted.

C. DISCUSSION

In this GRC, CWS requests $20,536,904 in 2016, 11,769,374 in 2017 and $26,829,185 in 2018 for a total of $59,135,463 for its specific capital expenditures. The specific project expenditure is comprised of varieties of capital projects, ranging from a copier replacement for a few thousand dollars to a SCADA project that costs millions of dollars over the life of the project. However, it is CWS's Information Technology (IT) related expenditures that representing the bulk of the specific capital budget. Specifically, CWS requests $5,695,350 in 2016, $6,443,387 in 2017 and $22,465,849 in 2018 for a total of $34,604,586 as its IT capital project expenditure for the current rate case. This is a significant amount that is nearly 60% of the total GO capital expenditure request. In this GRC, ORA recommends $3.4 million in 2016, $1.6 million in 2017 and $1.6 million in 2018 for the IT expenditure.

ORA will discuss IT projects as a group before discussing them individually.

GO IT Expenditure

To better understand CWS's IT capital expenditure, it is important to see how it compares to the IT budget of other Class-A water utilities and the utility industry in general. As can be seen in following discussion, CWS's IT expenditure is by far the largest among other Class-A water utilities in ORA's survey other Class A water utilities and well above the average when comparing to the benchmark of the utility industry. The survey and its results are being provided in later discussion of this chapter. In short, CWS is spending much more than its peers and requires significant funding for these projects from its ratepayer. It is therefore important for CWS to demonstrate to the Commission that the implementation of each IT project is reasonable and cost effective.

CWS's IT expenditure has been on a steady rise over the years. In the 2003 GRC, CWS spent $ 10.4 million on its IT capital projects. In the subsequent 2006 GRC, the expenditure reached $11.6 million, or an 11.5% increase. In the 2009 GRC, the expenditure spiked up by another $12.7 million, or 109%, to $24.3 million. In the most recent 2012 GRC, the expenditure level increased by an additional 11.1%, to $27 million. In the current GRC, CWS is requesting $33 million, or 22% increase over the 2012 GRC. The increase has been continuous for each of the past GRCs and there is indication that it

will increase at an accelerated rate in the foreseeable future. The following table summarizes CWS's IT expenditures from the 2003 GRC to the 2015 GRC, covering years 2005 to 2019.

Table 2-C: CWS IT Expenditure, 2003 GRC to 2015 GRC

GRC	IT Expenditure ($mil)	Increased Percent
2003(2005-07)	10.4	
2006(2008-10)	11.6	11.5%
2009(2011-13)	24.3	109.5%
2012(2014-16)	27	11.1%
2015(2017-19)	33	22.2%
Total	106.3	

Note:

1) Budget for 2014-2016 was approved by the Commission in 2012 GRC.
2) Budget for 2017 to 2019 is being requested in current GRC.

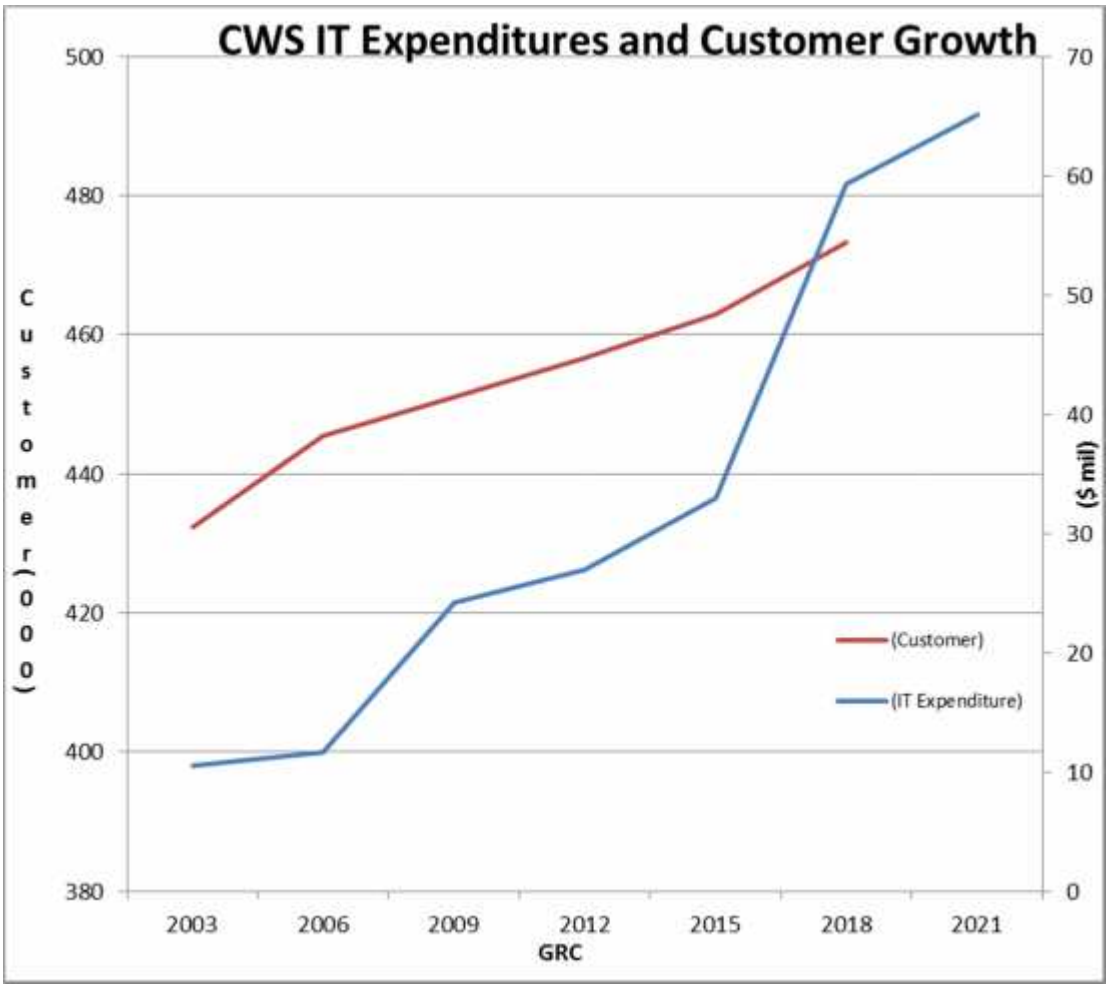
CWS's IT expenditure is expected to continue to rise beyond 2019. As provided in its Integrated Technology Master Plan,[1] CWS is forecasted to spend $59.3 million between 2019 and 2021, and an additional $65.1 million between 2022 and 2024. From 2017 to 2024, an eight year span covering three GRC cycles including the current GRC, CWS is expected to spend $157.4 million to implement capital projects within various IT programs. To put in perspective, CWS's IT expenditures have increased from $10.4 million in the 2003 GRC to $33 million in the 2015 GRC. This is a 217% increase while its total number of customers increased by only 9.4% during the same period[2]. The following Figure 2-A shows a comparison between CWS's IT expenditures from 2003 to 2021 GRC and customer growth between the 2003 and 2015 GRC.[3]

[1] The Integrated Technology Master Plan creates a comprehensive technology vision with supporting programs to realize CWS' desired business strategies over the next 10 years and beyond.

[2] 2017 to 2019 customer growth numbers are based on CWS forecast in the current proceeding.

[3] Customer growth numbers are not available beyond the 2015 GRC.

Figure 2-A: CWS IT Expenditures and Customer Growth



In September 2014, CWS retained an IT consultant Westin Engineering, Inc. to evaluate CWS's IT needs for the foreseeable future so that CWS will be able to align the company's business strategies with modern information technology solutions. Westin Engineering provided its recommendations in a report titled Integrated Technology Master Plan, which creates a "*comprehensive technology vision with supporting programs to realize California Water Service Company's desired business strategies over*

the next 10 years and beyond."[4] The report outlines various IT investment programs and the costs associated with each program; these are programs on which many of the proposed projects are based. The table below shows the programs and amount as provided on page 30 of the Integrated Technology Master Plan.

[4] Section 1.1 of Integrated Technology Master Plan.

Table 2-D: CWS IT Expenditure, 2014 to 2024

Program Areas	FY2014 thru FY2015 ($mil)	FY2016 thru FY2018 ($mil)	FY2019 thru FY2021 ($mil)	FY2022 thru FY2024 ($mil)	Total ($mil)
Enterprise Asset Management (EAM)	3.0	4.5	4.6	3.8	16.0
Enterprise Work & Workforce Management	2.5	2.5	6.4	3.9	15.4
Customer Service & Management	17.0	3.3	6.9	8.1	35.2
Water System Operations Automation & Control	7.6	18.2	29.3	32.1	87.1
Environmental & Regulatory Compliance	0.7	1.1	0.7	1.5	4.0
Business Management	2.7	5.3	3.3	2.6	13.9
Knowledge & Information Management	0.2	1.0	0.8	1.7	3.7
Technology Management	3.7	10.4	7.4	11.4	32.9
Total Funding, Integrated Technology Master Plan	37.4	46.2	59.3	65.1	207.8

CWS's plan is to spend a total of $157.4 million [5] over the next 8 years or $19.7 million per year from 2017 through 2024. This level of expenditure is significant for a water utility and is far above the IT expenditure of other Class-A water utilities in California. While there is no data showing the IT budget of each Class-A water utilities for the next 8 years, the historical expenditure of recent years (2012 to 2014) by CWS nevertheless indicates how unusually high CWS's IT expenditure is among the Class-A water utilities. To further illustrate this point, ORA performed an informal survey on the IT expenditure of several Class A water companies and for comparison purposes used various matrices such as: 1) IT expenditure as a percentage of sales revenue, 2) IT expenditure per employee, and 3) IT expenditure per customer. The table and graphs below summarize CWS's current IT spending level from 2012 to 2014 with the three expenditure matrices against other Class A water utilities'.

BEGIN CONFIDENTIAL: GOLDEN STATE WATER DATA ONLY

Table 2-E: CWS IT Expenditure Comparison with Other Water Utilities

	2012	2013	2014	2012	2013	2014	2012	2013	2014	
	IT/Exp/Revenue			IT Exp/Employee			IT Exp/Customer			
Cal Water	1.54%	1.99%	1.94%	$7,923	$10,720	$10,822	$17.5	$23.6	$23.3	
San Jose Water	1.33%	0.73%	0.50%	$8.836	$5.062	$3.533	$14.2	$8.2	$5.7	
Golden State Water										Confidential
Suburban Water	0.07%	0.10%	0.08%	$400	$583	$489	$0.7	$0.9	$0.7	
San Gabriel Water	0.12%	0.77%	0.97%	$584	$3,255	$4,221	$1.6	$9.1	$11.7	

Three Year Average 2012 to 2014

	IT Exp/Revenue	IT Exp/Employee	IT Exp/Customer	
Cal Water	1.82%	$9,822	$21.5	
San Jose Water	0.85%	$5,810	$9.4	
Golden State Water				Confidential
Suburban Water	0.08%	$491	$0.8	
San Gabriel Water	0.62%	$2,687	$7.4	

[5] CWS requested expenditures from 2015 GRC and Westin Engineering's recommended expenditures for 2018 and 2021 GRCs.

Figure 2-B: IT Expenditure as Percentage of Revenue

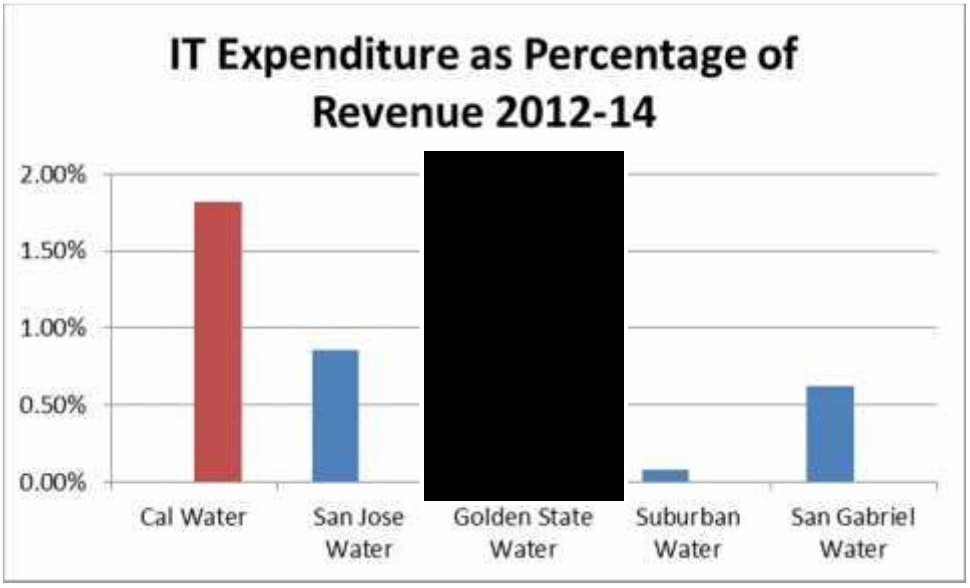


Figure 2-C: IT Expenditure Per Employee

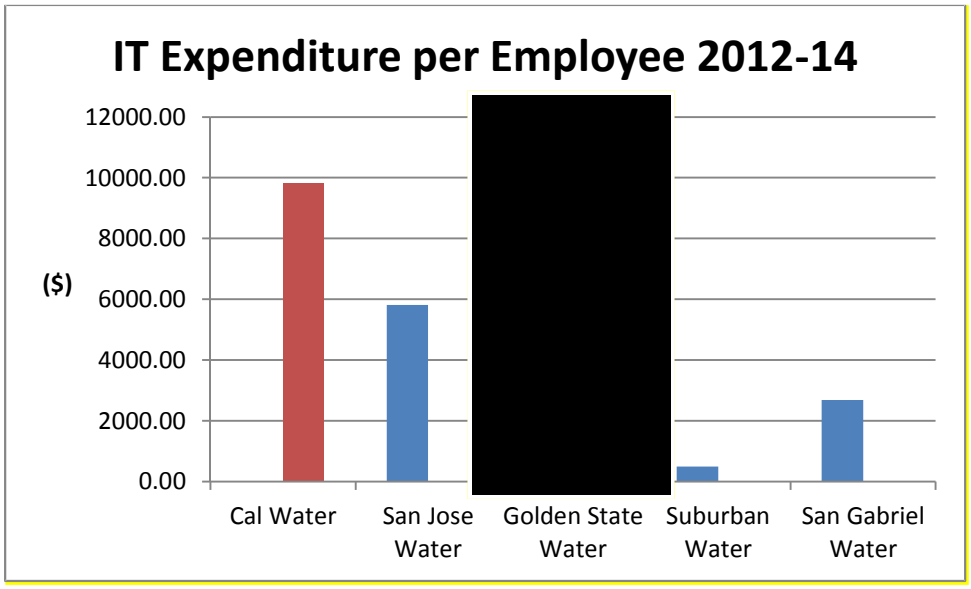
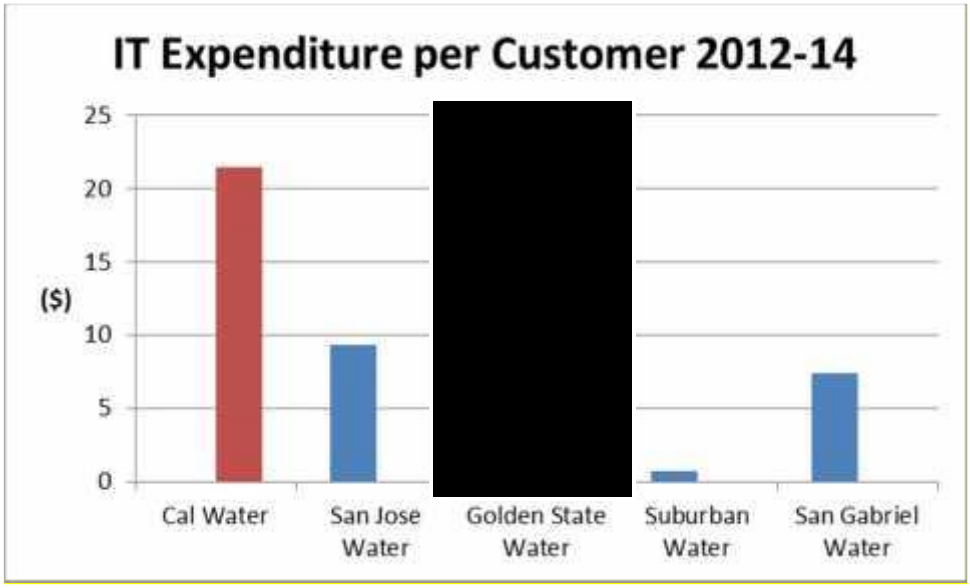


Figure 2-D: IT Expenditure per Customer



END CONFIDENTIAL: GOLDEN STATE WATER DATA ONLY

The data above provides a striking picture showing CWS has significantly higher IT budget when compared to four other Class A water utilities in California. For IT spending as a percentage of company's overall revenue,[6] CWS spent an average of 1.82%, 114% more than San Jose Water's 0.85%, which has the next highest expenditure, and 2175% more than the Suburban's 0.08%, which has the lowest expenditure among the companies in the survey. For average IT spending per employee, CWS's $9,822 per employee is 69% higher than San Jose Water's $5,810 per employee and is 1900% higher than Suburban's. For average IT spending per customer, CWS's $21.5 per customer is 128% higher than San Jose Water and 2587% higher than Suburban's. The significant difference in each of the matrices clearly shows that CWS's IT expenditure is not in line with the other water utilities in California, whose rates are regulated by this Commission

[6] According to Gartner, Inc., IT spending as a percentage of revenue is the most recognized measure of total IT investment relative to top-line business results.

and under similar supply cost and regulatory environment. A reasonable assumption under this circumstance is that CWS's expenditure on its IT programs has been excessive. This striking excessiveness will continue, and even accelerate, in the foreseeable future as outlined in CWS's Integrated Technology Master Plan.

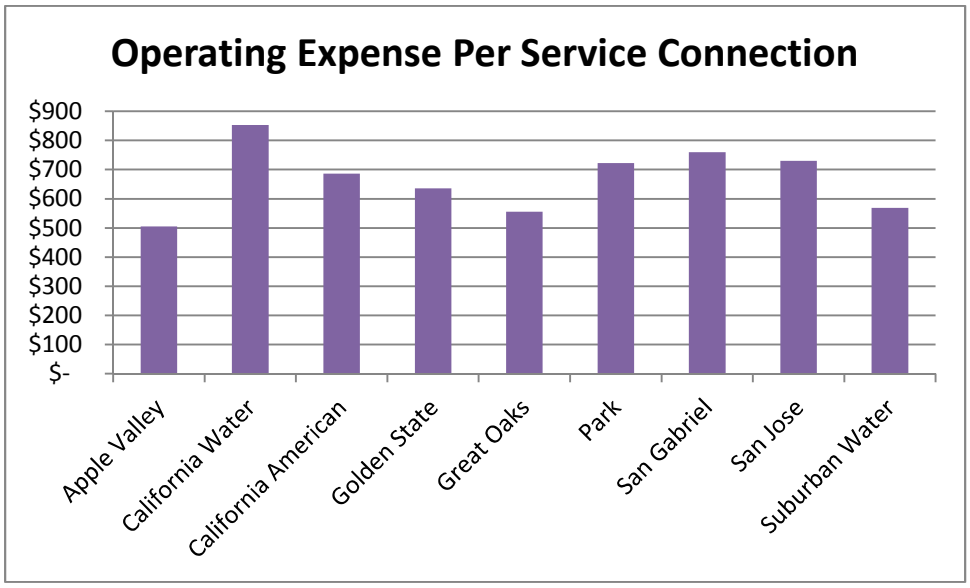
Having the largest IT expenditure, in theory, should enable CWS to become a more efficient company and thereby reduces its operating expenses. When comparing CWS's operating expenses per service connection with other Class-A water utilities in California, however, CWS's operating expense is the highest in the group. The three-year average (2012 to 2014) of CWS's operating expense per service connection is $854 or 12.5% higher than San Gabriel Valley Water Company's $759, the second highest in the survey. The following table and figure present the survey result of operating expense per service connection for 2012 to 2014.[7]

[7] Operation expense data come from A Study of Class A Water Utility Performance Metrics published by ORA, November 16, 2015.

Table 2-F: Operating Expense per Service Connection

OPERATING EXPENSE per CONNECTION				
	2012	2013	2014	3-yr avg
Apple Valley	$ 518	$ 527	$ 468	$ 505
California Water	$ 842	$ 871	$ 848	$ 854
California American	$ 656	$ 681	$ 724	$ 687
Golden State	$ 661	$ 616	$ 631	$ 636
Great Oaks	$ 518	$ 565	$ 584	$ 555
Park	$ 728	$ 746	$ 692	$ 722
San Gabriel	$ 730	$ 739	$ 809	$ 759
San Jose	$ 694	$ 747	$ 750	$ 731
Suburban Water	$ 571	$ 570	$ 567	$ 569

Figure 2-E: Operating Expenses per Service Connection



On average, CWS spent $854 per service connection in operating expenses between 2012 and 2014, by far the most among all Class-A water utilities in California. Despite having the largest IT budget over the years. CWS has not been able to demonstrate that such expenditure levels have resulted in higher efficiency and cost savings to its operation, as shown in the survey. It is therefore imperative for the Commission to require CWS to perform a cost benefit analysis before the implementation of any IT capital project.

CWS's expenditure not only outpaced its peers in California by a wide margin, it also exceeded the benchmark for utility industry across the U.S. In a 2014 survey performed

by Gartner Consultant,[8] titled IT Key Metrics Data 2014, the average utility industry[9] in U.S. spent about 2.8% of its revenue on IT related expenditure in 2014.[10] CWS, by comparison, spent a total of $18,718,615 on all IT related expenditures, or 3.37% of its revenue during this period; that rate is 20.4 % higher than the industry average. For this GRC, CWS's proposes an overall IT related expenditures of $15.2 million for 2016, $16.25 million in 2017 and $32.53 million in 2018. This translates to 2.4% of the CWS's proposed revenue in 2016, 2.4% in 2017 and 4.7% in 2018, for an average of 3.17%.

The IT budget proposed by CWS in this GRC and in the foreseeable future will impose a significant financial cost burden on its ratepayers. While other large water utilities such as San Jose Water and Golden State Water spent less than ***BEGIN CONFIDENTIAL*** [redacted] *** END CONFIDENTIAL*** per customer annually on IT project, CWS has been spending about $23 annually, ***BEGIN CONFIDENTIAL*** [redacted] *** END CONFIDENTIAL*** these companies' rate. The impact magnifies when considering the large number of low income customers served by CWS, ranging from 2.7% in Los Alt os Suburban to 44.8% in Selma. **Table 2-G** below

[8] Gartner Benchmarking provides comparisons of IT performance relative to the peer organizations and those considered best-in-class.

[9] Utility industry includes electric utilities, electric power generation by solar, wind, fossil fuels, nuclear, and hydro, electric power distribution, electric power transmission and control, gas utilities, natural gas transmission, retail energy marketing, independent/merchant power, water utilities, wastewater treatment, and water distribution.

[10] "IT-related expenditures" means CWS's estimate of total spending at the end of the 12-month budget period for IT to support the enterprise. IT budget/spending can come from anywhere in the enterprise that incurs IT costs, and it is not limited to the IT organization. IT is calculated on an annualized "cash out" basis, and therefore, contains capital spending and operational expenses, but not depreciation or amortization.

provides the number of Low Income Rate Assistance (LIRA) customers by CWS district in 2015[11].

Table 2-G: CWS LIRA Customers

CWS LIRA Customer by District - 2015

	Customers	LIRA Participation	% Participation
CUSTOMERS (Excluding Fire Protection)			
Antelope Valley	1,365	217	15.9%
Bakersfield	69,551	21,680	31.2%
Bayshore District - Mid-Peninsula & Bayshore	52,071	4,167	8.0%
Bear Gulch	18,589	792	4.3%
Chico	28,367	4,030	14.2%
Dixon	2,849	681	23.9%
East Los Angeles	26,102	10,164	38.9%
King City	2,544	947	37.2%
Livermore	18,082	1,317	7.3%
Los Altos Suburban	18,504	492	2.7%
Marysville	3,651	1,133	31.0%
Oroville	3,477	1,070	30.8%
Salinas	27,924	5,789	20.7%
Selma	6,201	2,776	44.8%
Stockton	42,577	15,684	36.8%
Visalia	42,127	11,726	27.8%
Willow s	2,400	745	31.0%
Westlake	6,934	377	5.4%
Kern River Valley	4,094	1,384	33.8%
Redw ood Valley Coast Springs	251	10	4.0%
Redw ood Valley Lucerne	1,198	465	38.8%
Redw ood Valley Unified	425	71	16.7%
Rancho Dominguez - Dominguez	32,846	6,969	21.2%
Rancho Dominguez - Hermosa Redondo	26,398	990	3.8%
Rancho Dominguez - Palos Verdes	23,977	775	3.2%
Total	461,139	94,234	20.4%

Besides having a large number of LIRA customers, several of CWS's service areas such as Lucerne, Coast Springs, Unified Area of Redwood Valley, and Antelope Valley get additional subsidies from the Rate Support Fund (RSF), due to the high-cost of service

[11] CWS Response to ORA Data Request VCC-003, Q1f.

and affordability issues. The RSF program is subsidized through surcharges paid by CWS's non-LIRA customers from all non-RSF service areas. CWS's proposed IT expenditure will have a significant burden on all of CWS's ratepayers; especially those that can least afford them. **Table 2-H** below shows that CWS ratepayers have been paying $17.64/year on average over the past 5 years due to the IT capital expenditure. As mentioned earlier, this burden will continue to grow as CWS accelerates its IT capital expenditure.

Table 2-H: IT Expenditure on Customer

	IT Capital Expenditure	Number of Customers	Expenditures per Customer
2010	$5,305,462	452,528	$11.72
2011	$5,496,850	454,849	$12.08
2012	$7,963,026	456,125	$17.46
2013	$10,795,264	457,593	$23.59
2014	$10,735,352	459,859	$23.34
		5-Year Average	$17.64

Given that ratepayers are being impacted significantly by the IT expenditure, it is imperative for CWS to demonstrate that its proposed IT projects are reasonable and cost effective. The benefit of each project must be identifiable, and quantifiable through a cost benefit analysis.

In its Integrated Technology Master Plan, CWS has identified the objectives, strategies and goals of its IT budget. When it comes to cost benefit analysis, CWS was very vague and in most cases, did not perform one. In Section 3.1 of the Integrated Technology Master Plan, CWS provided five business justifications as the analysis on Return on Investment (ROI):

1. *Safety- ensure that employees, customers, and public can be assured that CWSC services are delivered in a safe and secure manner, and that safety is always considered the top priority by the Company.*

2. *Customer Service- Improvement of customer satisfaction and overall experience with CWSC services, responsiveness, communications, and billing.*

3. *Cost Avoidance- avoiding future increases in costs such as those associated with the need for additional staff.*

4. *Regulatory Compliance- performing all business and operations in compliance with all regulatory mandates, and reporting compliance in a timely and accurate manner.*

5. *Risk Management- managing the life cycle of critical assets to reduce or eliminate the risks of unplanned equipment breakdowns, service outages, and untimely response to breakdowns and outages.*

The presentation of Return on Investment (ROI) analysis in CWS's Master Plan was ambiguous. CWS identified no specific cost savings and increased efficiency for the IT projects, and thus fell short of the requirement that they must be identifiable, and quantifiable. As shown in the individual project discussions below, CWS is unable to provide such analysis even when asked by ORA in its data requests. This is not acceptable. Ratepayers would not be served well without knowing the specific and measurable benefits they will receive in return for funding these projects.

ROI is not a new concept and is commonly used in both public and private industries to compare the effectiveness of capital project investments. It is often used to justify IT projects, but can measure project at any stage and be used to evaluate project team performance and other relevant factors. The basic ROI calculation is to divide the net return from an investment by the cost of the investment, and to express this as a percentage. The basic formula of ROI is expressed as:

ROI %= [(Return *less* Investment Cost)/Investment Cost] x 100

Comparing the ROI of different projects/proposals provides an indication as to which IT projects to undertake. ROI proves to corporate executives, shareholders, and other stakeholders that a particular project investment is beneficial for the business. A project is more likely to proceed if its ROI is higher- the higher the better. For example, a 200% ROI over 4 years indicates a return of double the project investment over a 4-year period.

Financially, it makes sense to choose projects with the highest ROI first, then those with lower ROIs. While there are exceptions, such as safety or regulatory compliance mandates, if a project has a negative ROI, it is questionable if it should be undertaken or authorized to proceed.

Despite not having a cost benefit analysis for most of its proposed capital projects, CWS did present a detailed ROI calculation for Project 99534 to deploy a centralized Material Safety Data Sheet (MSDS) management solution with standard management processes. Here, CWS provided $23,122 as the estimated annual wage and resource costs by CWS for managing a compliant paper-based MSDS system. By deploying a centralized MSDS management solution with first year cost of $17,674 and $10,174 annually thereafter, CWS is showing that it would achieve $31,343 as cost savings over the first three years. Thus the project provides a ROI of 77% over three years, for which ORA finds reasonable and recommends the Commission to approve this project. This project is an example that CWS is capable to performing a reasonable cost benefit analysis for its capital projects. ORA suspects that the reason CWS failed to provide such analysis is perhaps many of them are not cost effective. As such, no project should be approved by the Commission without a reasonable cost benefit analysis.

Cost benefit analysis is also an important justification for any significant capital project required by the Commission's Rate Case Plan (RCP) adopted in Decision D.07-05-062. In Section D of Appendix A of the RCP, the Commission stated that "*all significant capital additions shall be identified and justified, and must include need analysis, cost comparison and evaluation, conceptual designs, and overall budget*." The cost benefit analysis should be provided as part of the "cost comparison and evaluation" analysis per the RCP's requirements. By not including a cost benefit analysis for its capital projects, CWS's showing is deficient.

Given the important role of cost benefit analysis plays in determining the viability of an IT project, the financial impact it has on CWS's ratepayers, and the requirement of the RCP, it is imperative for CWS to propose its IT projects that are supported by a reasonable ROI. Therefore, project justification that does not include the cost benefit

analysis as an integral part of CWS's proposed individual capital project fails to demonstrate its benefits to the ratepayers.

ORA provides its analyses and recommended adjustments to CWS's requested capital budget in the following discussion. Projects that ORA does not contest will not be included in the discussion. The discussion is organized by the following sections:

- Section 1, 2016 Specific Projects Over $100,000,
- Section 2, 2017 Specific Projects Over $100,000,
- Section 3, 2018 Specific Projects Over $100,000,
- Section 4, 2016-2018 Specific Projects Less Than $100,000,
- Section 5, Non-Specific projects, and
- Section 6, Carry-Over Projects.

1. 2016 Specific Projects Over $100,000

CWS requests an overall amount of $20,536,905 for its proposed GO capital projects for 2016, whereas ORA recommends $9,972,813. **Table 2-B** provided earlier presents a summary of the GO-related capital projects that ORA has either removed from CWS's plant additions or recommended a different amount than that proposed by CWS. ORA will provide the discussion of the projects that are less than $100,000 in the Section 4, 2016-2018 Specific Projects Less than $100,000.

a. Project 69930 Distribution Map Conversion to Geographic Information System (GIS)

CWS requests $435,959 in 2016 to convert its distribution maps to the Geographic Information System (GIS). CWS states that upon completion of this project CWS will be able to eliminate the need to update the distribution map within CAD. CWS claims that it will result in 100% consistency between all views of the water system, because each representation (atlas map, distribution map, online GIS viewer, etc.) will be produced from a common geo-database updated on time.

As provided on page 12 of the Project Justification, CWS has estimated a cost savings of $59,409 due to the implementation of this project. However, such savings have not been reflected in CWS's GRC showing (expense workpapers). As such, ORA recommends the Commission to approve this project with the condition that its 2017 GO expenses be reduced by $59,409.

b. Projects 97777 (Routine IT Replacement)

CWS requests $330,895 in 2016 to replace obsolete computer equipment and accessories such as desktops, laptops, monitors, tablets and printers used by employees to perform various tasks within the CSS. CWS estimated that the standard average life cycle for computers, printers, monitors, etc. is four years. It is therefore proposing to replace 1/4 of the hardware annually to control costs and provide support for essential business functions.

ORA agrees with the need to replace the computer hardware on a regular schedule but disagrees with CWS's proposed four-year life cycle of these equipment. According to the MACRS Asset Life table that is derived from Revenue Procedure 87-56 1987-2 CB 674, the recovery period for IT equipment such as computer is 5 years, not 4 as proposed by CWS. Accordingly, CWS should only replace 1/5 of its computer hardware on an annual basis.

ORA recommends CWS's 2016 routine IT replacement program be reduced to $264,716, or a 20%[12] reduction, based on the IRS-recommended 5-year recovery period for computer hardware. This recommendation will also apply to the routine IT replacement in 2017 and 2018 under Projects 97779 and 97783.

[12] Difference between ¼ and 1/5 is 20%.

c. Project 98644 and Project 98685

CWS requests $180,565 for each project to purchase a new gas chromatograph/mass spectrometer (GC/MS) to replace a 2004 disinfection/disinfectant byproduct instrument and a 2009 volatile organic instrument. CWS's main justification for each of these projects was that the current instrument vendor, Varian Inc. owned by Agilent Technologies, is no longer providing support and guarantee to the existing equipment. CWS also claimed that Agilent terminated its guaranteed support for the GC/MS system on 1/1/2012.

To verify CWS's claim, ORA called Agilent customer service on October 16, 2015. Contrary to CWS's claim, ORA learned that CWS has recently renewed its service contract with Agilent for one year. This service contract will allow the GC/MS instruments to be serviced and repaired as stipulated in the service contract. Additionally, there is no indication that this service contract will not be renewed after its expiration. The Agilent representative stated that even if Agilent does not offer support to the existing instruments, CWS could request support from a third-party vendor such as Full Spectrum Analytical to service its needs.

Since CWS's existing instruments are currently under contract for maintenance and repair and can continue to do so in the foreseeable future, ORA does not see the need for a new replacement. Therefore, CWS's Project 98644 and 98685 should be denied.

d. Project 99030 Replace (14) Portable Booster Pumps

CWS requests $1,745,166 to replace 14 portable booster pumps that CWS states will no longer be permitted to operate beyond January 1, 2017. CWS explained that the need to replace is due to the recent requirement imposed by California Air Resources Board (CARB) that all off-highway diesel driven engines must be Tier 4 compliant by January 1, 2017. CWS claimed that its current existing portable booster pump engines are Tier 0 and not Tier 4 compliant which must be removed from service and be replaced in order to comply with this regulation.

One of the cost effective ways to comply with the regulation is to retrofit the existing portable engines with some form of emission controls. According to Dieselnet.com, an online forum that provides information on engine and emission technology, "*the estimated cost for added emission controls for the vast majority of equipment was estimated at 1-3% as a fraction of total equipment price. For example, for a 175hp bulldozer that costs approximately $230,000 it would cost up to $6,900 to add the advanced emission controls and to design the bulldozer to accommodate the modified engine.*"[13]

In its data request, ORA asked CWS if it has considered retrofitting the existing engines to meet the regulation requirement; CWS responded by stating the following: [14]

> Cal Water explored the possibility of retrofitting one portable booster in this project that was damaged during use an emergency event. The total cost to refurbish was $84,249.25. However, this quotation involved lower quality materials for sound attenuation, and would likely require $10,000 to $15,000 in additional material costs to bring the unit to an acceptable level of service. The retrofit doesn't carry the same warranty as a new unit and has a lower life expectancy. The quoted cost of a new unit was $119,225, or roughly 20% more. Additionally, Tier 4 engines are substantially larger than previous engines due to components designed to capture more particulates and capabilities to regenerate the capturing method. This creates some challenges in retrofitting existing trailers and pump ends to accommodate the larger engine dimensions. We anticipate the useful service life of these new units to be approximately 20 years. Since the price difference is less than 20%, retrofitting requires difficult design concessions, and does not ensure the remaining components will have an equal remaining useful life of 20 years; it does not make sense to retrofit the existing fleet.

CWS has determined that since purchasing a new portable engine costs about 20% more than retrofitting an existing engine with the assurance of a 20-year useful life, it makes more economical sense to purchase rather than to retrofit.

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[13] https://www.dieselnet.com/standards/us/nonroad.php

[14] CWS response to ORA Data Request VCC-001, Q4d.

CWS's determination that the purchase option is more cost effective than the retrofit option is wrong. The quote provided by CWS was for the cost to refurbish a damaged engine, not retrofit an existing engine in order to meet Tier 4 compliance. It is inappropriate to use a quote based on refurbishing a heavily damaged engine as support for the cost of retrofitting an existing engine in good working condition. The appropriate support would be to obtain a direct quote from a vendor for just the work needed to retrofit an existing engine.

Given that retrofitting an existing engine is likely a more cost effective way to comply with CARB's Tier 4 requirement and the fact that CWS provided a cost quotation that is not related to retrofitting an existing engine, ORA recommends that this project be denied.

e. Projects 99136, 99137 and 99138- Vehicle Replacements

CWS's vehicle replacement program is based on the criteria established by California Department of General Services (DGS) Office of Fleet and Asset Management (OFAM). ORA follows the same guidelines and made adjustments to CWS's three years (2016 to 2018) vehicle replacement requests as shown in the following **Table 2-I**. A more detailed vehicle replacement discussion is provided in ORA's Report on Plant – Common Issues.

Table 2-I: Vehicle Replacements for 2016 to 2018

FP #	Vehicle #	Mileage (as of 8/31/2015)	Year	Make	Model	Year in Service	Annual Average Mileage	Replacement Criteria	Year in which Mileage Reached Criteria
99136	V201012	164886	2001	Ford	E-350	14			
99136	V205074	107086	2005	Dodge	Dakota	10	10709	120,000	2016
99136	V208140	229008	2008	Chevrolet	ilverado 150	7	32715	120,000	2016
99136	V208163	128155	2008	Ford	F-150	7	18308	120,000	2016
99136	V209077	213843	2009	Toyota	Tacoma	6	35641	120,000	2016
99136	V209070	107356	2009	Ford	F-350	6	17893	150,000	2018
99136	V207097	102718	2007	Toyota	Prius	8	12840	120,000	2016
99136	V207098	156828	2007	Toyota	Camry	8	19604	120,000	2016
99136	V209075	109793	2010	Ford	Fusion	6	18299	120,000	2016
99136	V209079	155772	2010	Ford	Fusion	5	31154	120,000	2016
99136	V209089	114915	2010	Ford	Fusion	6	19153	120,000	2016
99136	V210004	120040	2010	Ford	Fusion	5	24008	120,000	2016
99136	V208147	103100	2008	Toyota	Highlander	7	14729	120,000	2016
99136	V209001	206694	2009	Acura	MDX	6	34449	120,000	2016
99136	V209084	161324	2009	Ford	Explorer	6	26887	120,000	2016
99136	V210033	122021	2011	Ford	Edge	5	24404	120,000	2016
99136	V210026	40935	2012	Audi	A8	3	13645	120,000	disallow
99137	V213064	57049	2013	Ford	F-150	2	28525	120,000	2017
99137	V213060	62303	2013	GMC	Sierra	2	31152	120,000	2017
99137	V208014	99229	2008	Ford	F-350	7	14176	150,000	2019
99137	V209071	89430	2011	Ford	F-450	4	22358	150,000	2018
99137	V210028	86646	2011	Ford	F-450	4	21662	150,000	2018
99137	V211022	74902	2011	Ford	F-350	4	18726	150,000	2019
99137	V205064	97992	2005	Chevy	Impala	10	9799	120,000	2017
99137	V209095	124839	2010	Ford	Fusion	5	24968	120,000	2017
99137	V205006	101645	2005	Ford	F-150	10	10165	120,000	2017
99137	V212027	79229	2013	Ford	Explorer	2	39615	120,000	2017
99137	V212036	61681	2013	Ford	Explorer	2	30841	120,000	2018
99137	V213055	77503	2013	Ford	Explorer	2	38752	120,000	2017
99138	V212030	50999	2012	Ford	F-150	3	17000	120,000	2019
99138	V209098	69296	2011	Ford	F-450	4	17324	150,000	disallow
99138	V211028	58535	2012	Ford	F-450	3	19512	150,000	disallow
99138	V208155	89531	2009	Toyota	Camry	6	14922	120,000	2018
99138	V209080	66722	2010	Ford	Fusion	5	13344	120,000	2020
99138	V213049	56641	2013	Toyota	Camry	2	28321	120,000	2018
99138	V213063	56100	2013	Acura	TSX	2	28050	120,000	2018
99138	V211031	57674	2012	Ford	Escape	3	19225	120,000	2019
99138	V212035	63865	2013	Ford	Explorer	2	31933	120,000	2018
99138	V213053	50400	2013	Dodge	Journey	2	25200	120,000	2018
99138	V213061	52393	2014	Ford	Explorer	1	52393	120,000	2018
99138	V213065	43294	2013	Ford	Edge	2	21647	120,000	2019
99138	V213067	52574	2013	Ford	Escape	2	26287	120,000	2018
99138	V213075	37933	2014	Freightliner	Sprinter	1	37933	150,000	disallow

f. Project 99348 Depreciation Forecast in PowerPlan

CWS requests $223,363 to implement a depreciation forecast feature in PowerPlan, where the advanced capital budgets, actual assets, depreciation rates, and the deferred tax adjustment are housed. This new feature in the budget module can analyze these data and

create a depreciation forecast for both book and tax purposes for rate making areas. CWS states that the depreciation forecast data can then be integrated with future Budgeting and Rate Case tool.

CWS currently uses Excel as a primary tool to put together the company's rate case. Estimates for revenue, expenses and the rate base components are calculated using Excel which CWS believes could pose a great risk for errors and thus could cause negative impact to both CWS and the ratepayers.

The current process of preparing CWS's rate case is adequate. The use of Excel as a primary tool to prepare general rate cases is standard among all Class A water utilities for many years. For many of these companies, human errors such as incorrect linking using Excel should be minimized with the experience of each rate case. Over the span of the last three general rate cases, CWS provided only one instance of linking error involved with the calculation of depreciation reserve in its Kern River Valley District in the 2012 GRC.[15] Moreover, CWS has not provided measurable cost savings and efficiency that would result from this project. ORA recommends this project be denied.

g. Project 99378- Upgrade PowerPlan Modules and Install Repairs Tax Module

CWS requests $1,519,244 to upgrade its PowerPlan modules and to install a new Tax Repairs module. The PowerPlan modules include Projects, Assets, Budgets, Depreciation, ARO, Lessee Accounting which will reach their end of life by 2016. For the Tax Repairs module, CWS has been paying a license fee of $280,000 per year since 2014 to its vendor.

[15] CWS response to ORA Data Request VCC-001, Q6e.

ORA does not oppose the entirety of this project since it involves upgrading of the existing PowerPlan modules that are reaching the end of expected service life. ORA opposes the installation of the Tax Repairs module because CWS has been able to use this module by paying a license fee since 2014. Moreover, CWS did not provide the measurable cost savings and efficiency due to the installation of the Tax Repairs module. As such, ORA removes the cost of the Tax Repairs installation, or $595,355 from the project estimate. ORA further removes $200,000 for "extension refund/AP interface" and the $73,206 for escalation because CWS did not provide the necessary support to explain the nature of these costs and the reason they are needed. ORA recommends the Commission approve only $650,682 for the upgrade portion of this project.

h. Project 99379- New PowerPlan Property Tax Functionality

CWS requests $114,202 to install a new PowerPlan Property Tax functionality that will allow the Company to upload property tax bill information, verify the assessment, and interface the payment details to Accounts Payable. Currently, CWS uses Excel to perform review of its assets by comparing last year versus this year by district and by county. CWS states that this requires staff to call districts for on-going projects in order to make sure that the incremental assessment which increases the property tax is reasonable. To CWS, this process is difficult and inefficient.

ORA disagrees with CWS's assessment. The current process of reviewing property tax is sufficient even though some manual effort is required. More importantly, CWS had already installed a first phase of the property tax module in 2013 which has provided the core functionality[16] of the tax module that is needed to process property tax payments. There has not been any issue associated with the way CWS has been paying its property tax to the assessor's office, both before and after the implementation of the first phase tax

[16] CWS response to ORA Data Request VCC-001, Q8c.

module. When ORA asked about the consequence of not implementing this project, CWS's response was as follows: "*Data accuracy is a risk. Hard to detect and verify the reasonable increased assessment. Communication time to districts can be high.*"[17] None of these reasons is sufficient to warrant an additional expenditure of $114,202.

CWS's property tax assessment process currently in place is sufficient. ORA recommends that this project be denied.

i. Project 99383- Complete Tax Provision Module with M-Items Tax Calculations

CWS requests $539,005 to complete the Tax Provision module by installing features that allow it to calculate M-Items tax calculation. The M-Items are a collection of items used to calculate deferred taxes and is a deduction to the rate base. Although calculation of M-items is a complex and manual process, all Class A water utilities, including CWS, currently are using Excel as the tool to track and calculate the Schedule M items. In fact, CWS acknowledged in its data request response VCC-001 that it has been using Excel as a tool to track Schedule M items since 1982. ORA does not dispute the PowerPlan Tax Provision module would enable CWS to calculate the M-Items more efficiently. However, the cost of this project at $539,005 poses a big financial burden to the ratepayers and it is difficult to quantify its benefit in the absence of a cost benefit analysis. As such, ORA recommends that this project be denied.

j. Project 99423- Upgrade Elevator, Building C

CWS requests $180,318 to replace the single jack assembly on an elevator in Building C of its CSS campus in San Jose. The upgrade is required to meet the current ASME/ANSI A17.1-2000 elevator safety code requirements. ORA determines the need for this project

[17] CWS response to ORA Data Request VCC-001, Q8e.

is reasonable, and recommends that this project be approved with the condition that an update cost estimate be provided by the time settlement meeting is held. CWS based its estimate on a proposal prepared by Lewis & Tibbitts, Inc. in 2011. CWS in its response to VCC-001 has assured ORA that an update will be provided at a later date.

k. Project 99428- Additional Working Space at GO

CWS requests $393,984 to install three modular trailer units at its CSS campus. CWS stated that its CSS campus has reached its full capacity in terms of available work space and parking space. The four buildings on campus house approximately 265 full and temporary CWS employees, as well as thirty to forty interns, auditors and consultants at any given time. CWS states that many of the conference rooms are occupied full time by auditors and consultants working on long term projects and there are not enough open work stations and offices to accommodate them. In April 2014, CWS enlisted Facilities First, a consultant specialized in space planning, to evaluate the best available options for CWS to improve its work environment. CWS claimed that Facilities First has determined the CSS campus is in 90-95% occupancy, which is the maximum range at which CWS needs to create additional space to meet its need.

ORA has reviewed the consultant report and found CWS may have misinterpreted the recommendations by Facilities First. Page 16 of the report states:

> We prepare a Space Program to assess both how the space is currently being utilized and to forecast future space needs. It is a good business practice to plan for a maximum of 90-95% occupancy rate to allow for space assignment inefficiencies, employee turnover, temporary staffing, and hiring. Today Cal Water's GO is running about <u>89% occupancy rate</u>, which will accommodate immediate hiring plans. (Underline added.)

The consultant report suggests that the current occupancy rate of 89%, not 90-95% as CWS stated, is adequate for the immediate need. The report further provides ten

recommendations to address the short-term space need, ranging from leasing off-site local laboratory space for the Water Quality Group (option 1) to transferring some of the forecast growth or certain functions to district offices with available space or other off-site locations (option 8) .[18] None of these options presented recommends the purchase of three modular units. This appears to be CWS's own proposal that is not supported by the consultant report. As such, it is unclear if any of the ten options recommended by the consultant is more cost effective than the purchase of the modular units. If CWS wants to purchase the modular units as a mean to address the lack of work space, it needs to explain why the ten options are not more cost effective as compared to the purchase of the modular units.

In this GRC proceeding, CWS is not requesting any new positions for its GO campus. In the short term, there does not appear to be an immediate need for CWS to add work space for its current staffing level.

For reasons stated above, CWS's request to purchase three modular units should be disallowed.

l. Project 101760- Security Cameras

CWS requests $495,379 to install 76 security cameras and associated equipment at its CSS campus. This is in addition to the security measures that it currently has in place, such as security access panels and badges on all entrance/exit doors, audible and glass break alarms in all buildings and monitoring of the security alarms by a third party and an after-hours on-call program to provide adequate response time to any potential issues. CWS claims that one major security deficiency is in regards to the visual monitoring of the campus during and after regular working hours. Installation of the security cameras

[18] Pages 7-8 of consultant report by Facilities First.

would allow authorized CWS employees to view cameras remotely in real time and to refer back to the cameras in case there is a need to identify who has accessed an area after an incident has occurred.

CWS's request for this project is both unsupported and unnecessary. In 2013, CWS retained a security threat management group to perform a security assessment for its CSS campus. As part of the support for this project, CWS presented Recommendation #25 from the assessment report which states:

> We recommend that the use of surveillance cameras at the campus entrances be considered. These cameras would provide video documentation of vehicles entering and exiting and would be a useful tool when it was necessary to investigate a security incident that occurred on campus.

The recommendation specifies surveillance cameras be installed at the campus entrances, not an elaborate surveillance system with 76 cameras monitoring the entire CSS campus. CWS's justification for this project does not reflect its own security assessment report's recommendation and is therefore without merit.

In its response to ORA's data request, CWS provided a list of eight security issues and problems that it encountered in the past 10 years.[19] Two of these incidents involved the theft of personal items inside the office and one in the carport area during business hours, one incident involved a trespasser entering the property and took out spray paint from an unlocked cabinet, and one involved a terminated employee making threats of violence towards employees of the organization. The remaining four incidents involved trespassers entering the campus, and throwing bottles onto the property. There is no support that any of these incidents would be prevented with the installation of the security cameras around the campus.

[19] CWS response to ORA Data Request VCC-001, Q15c.

CWS's current security measures are adequate. CWS's support for this project is deficient, and there is no evidence that any of the past security issues cited by CWS could have been prevented with the proposed project. ORA, therefore, recommends that this project be disallowed.

2. 2017 Specific Projects- Over $100K

CWS requests an overall amount of $11,769,374 for its proposed capital projects in the GO for 2017, whereas ORA recommends $2,186,645. **Table 2-B** provided previously presents a summary of the GO-related capital projects that ORA has either removed from CWS's plant additions or recommended a different amount than that proposed by CWS.

a. Project 97779- Routine IT Replacement

CWS requests $342,525 to replace obsolete computer equipment and accessories such as desktops, laptops, monitors, tablets and printers used by employees to perform various tasks within the CSS. CWS has adopted a PC Refresh Program in which it will replace 1/4 of the hardware annually to control costs and provide support for essential business functions. Consistent with ORA's recommendation in Project 97777 for 2016, CWS's request for this project should be reduced by 20% or $68,505, to $270,020.

b. Project 97781- Replace Video Conferencing System

CWS requests $381,839 to replace its companywide video conferencing system used in its 26 office locations. CWS states that the system facilitates training delivery and meetings, and reduces travel costs. The existing system was first implemented in July 2012 and according to CWS, needs replacement due to the expiration of hardware and software support from the manufacturer.

In its response to ORA's data request, CWS acknowledged that the current system will continue to receive support from the manufacturer should there be technical issues.[20] Additionally, in the event the original manufacturer no longer provides support, there are third party vendors that can. At this time, the video conferencing system is still in relatively good condition as evidenced by the low frequency of repairs over the past four years. From 2011 to 2014, CWS recorded a total of 19 service calls for its video conference system; all but three of these calls were covered under the existing warranty. The remaining three services calls cost CWS only $3,600.

Given that the current system is still in relatively good condition and CWS will continue to receive support from the manufacturer or third-party vendor, ORA recommends that half of this project ($190,920) be implemented in 2017 and the remaining in 2018.

c. Project 97782- Knowledge and Information Management (KIM) Program

CWS requests $818,437 as part of a project to implement a Knowledge and Information Management (KIM) Program, based on its Integrated Technology Master Plan. The completion of this entire project will ultimately cost about $3.7 million according to the Master Plan. CWS claims that the completion of this project would add value incrementally to the company and ratepayers. However, since this project is a part of a larger program the entire value of this project will not be recognized until all projects within the entire program is completed. CWS provided the followings goals of the projects:

- To engage the Communities of Practice to lead development and overall knowledge management.

[20] CWS response to ORA Data Request VCC-002, Q1d.

- To refine the knowledge structure (knowledge categories and dimensions; content, document, and records types; etc.).
- To refine knowledge update, renewal, and archiving processes.
- To specify, design and select an Enterprise Content Management System- guided by the vision, best practices, and strategies for the management of knowledge/content, documents, and records.
- To develop an implementation plan for the new Enterprise Content Management System- including piloting and deployment phases.
- To produce and configure an Enterprise Content Management System- including integrated capabilities for managing knowledge/content, documents, and records.
- To pilot the deployment of the new Enterprise Content Management System- implementing a website to support the Program Management Office (PMO).

As per previous discussion on CWS's IT expenditures, none of the projects including the KIM program, based on the Integrated Technology Master Plan has provided a cost benefit analysis or ROI. This is not acceptable because ratepayers deserve to know upfront what they are paying for and how much benefit they are expected to get in return. CWS's proposed KIM program bears high level of risk that it may not meet its intended goals since no other water utilities in the U.S. have deployed such information management program. For these reasons, ORA recommends that this project be disallowed until CWS can provide a cost benefit analysis with a reasonable ROI.

d. Project 99377- Upgrade and Update of the Invoice Document Management Software System

CWS requests $554,660 to upgrade and update its existing Invoice Document Management software system. CWS states that the vendor of this software Perceptive Software will discontinue its support for the applications in 2017. CWS asserts that the upgrade is required to bring the core functionality up to current versions to maximize the integration of all of the company's core applications. CWS explains that in addition to the upgrade the new Intelligent Capture (Brainware) module will be implemented. This new functionality will enable the Company to automate scanning and related data entry to

create the initial voucher (AP invoice) in PeopleSoft financials. With automated extraction, the computer analyzes scanned documents and extract data according to programmed criteria.

In its response to ORA's data request, CWS projects an annual labor savings of about $97,000 from the installation of the Intelligent Capture module.[21] With this savings, the project will be paid for in about four years, while the benefit will continue going forward.

Since this project is part of the routine update and the installation of the Intelligent Capture module is expected to generate labor savings, ORA recommends that this project be approved with the condition that the annual savings of $97,000 be passed on to ratepayers by reducing this amount in GO's labor expense forecast for Test Year 2017.

e. Project 99382- Support Tools for New Supply Chain Management

CWS requests $646,134.36 to improve its procurement system. CWS currently uses PeopleSoft Purchasing system for procurement processing. CWS claims that this system is convoluted and time consuming, does not facilitate easy adoption of new suppliers and maintenance of supplier capability data, and is difficult for the company to manage warranties, monitor contract expiration, and negotiate/renew prices. However, it appears that CWS has been able to manage these issues adequately using the current procurement system. In its response to ORA's data request on how it currently manages the problems with the current procurement system, CWS responded with the followings[22]:

- *Cal Water tries to provide more user support and education to help ease the confusion and burden of creating requisitions.*

[21] CWS response to ORA Data Request VCC-002, Q3g.

[22] CWS response to ORA Data Request VCC-02, Q4b.

- *Suppliers submit registration forms via email but Cal Water internally does not have an effective way to track all suppliers who registered with us due to resource constraint.*
- *Most contracts are being tracked manually.*

CWS's responses suggested that it can manage the current procurement system issues with more user support and education, and perhaps more resources. However, it is unclear what additional costs, if any, would be needed, for such effort since CWS did not perform a cost benefit analysis on this project.

Given that CWS is able to manage the issues with the current procurement system and there was no cost benefit analysis being performed, ORA recommends that this project be disallowed.

f. Projects 99425, 99426, 99427- HVAC Replacements

CWS requests to replace eight units of air conditioners each year from 2016 through 2018 under Projects 99425, 99426, and 99427. Its main justification is that these air conditioning units have reached the end of their useful life of 15 years, based on the guidelines published by the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE). In its response to ORA's data request, CWS provided a chart published by ASHRAE that suggests the median life expectancy of a roof top system is 15 years.[23] It is ORA's interpretation that the data presented by ASHRAE for "median life expectancy" implies that half of the equipment in its survey falls below the 15-year mark while other half exceeds it, depending on many factors. It does not mean that an air condition unit should be replaced once it reaches 15 years of service life.

[23] CWS response to Data Request VCC-002. Q5a.

In its publication titled 2011 ASHRAE Handbook-HVAC Applications, ASHRAE identified many factors that could cause the end of service life for an air conditioning equipment, including: obsolescence, reduced reliability, excessive maintenance costs, changed system requirements, energy prices, environmental considerations, or failure. None of these specific factors were evaluated by CWS in its determination of replacing its air condition units. Rather, CWS uses service life as the single criteria in its replacement decision.

CWS currently has a contract with Ferreira Services, Inc. to service its air conditioning units for repair and regular maintenance. CWS's units should be in relatively good condition since they have been maintained on a regular basis as evidenced by some existing units that are still in service today even after 24 years of service. For these reasons, ORA recommends that CWS should replace the air conditioning units on a 20-year interval[24] instead of 15-year, as shown in the **Table 2-J** below. CWS will be replacing eight units in 2016, zero units in 2017, and one unit in 2018 under the 20-year replacement criteria.

[24] CWS's estimated economic life of a HVAC unit is 15 to 20 years.

Table 2-J: CWS and ORA's HVAC Replacement 2016 to 2018

	Serial #	Manufacture Date	Age	CWS Requested Year Replace	ORA Recommends 20 year replacement	Notes
	Building A					
Ac1	1102G50233	2002	12	2017	2022	disallow
Ac2	1702G20155	2002	12	2017	2022	disallow
Ac3	1002G50091	2002	12	2017	2022	disallow
Ac4	1402G20379	2002	12	2017	2022	disallow
Ac5	1902G20149	2002	12	2017	2022	disallow
Ac6	1702G20157	2002	12	2018	2022	disallow
Ac7	4595G40032	1995	19	2016	2015	replace in 2016
Ac8	N/A	2002	12	2018	2022	disallow
Ac9	N/A	2002	12	2018	2022	disallow
	Building B					
Ac1	4590C2519	1990	24	2016	2010	replace in 2016
Ac2	2605G31231	2005	9	2018	2025	disallow
Ac3	0599G20458	1999	15	2017	2019	replace in 2019
Ac4	0592C32144	1992	22	2016	2012	replace in 2016
Ac5	0999G20834	1999	15	2017	2019	replace in 2019
Ac6	4290C18257	1990	24	2016	2010	replace in 2016
Ac7	2105G51399	2005	9	2018	2025	disallow
Ac8	N/A	1992	22	2016	2012	replace in 2016
Ac9	3092C85924	1992	22	2016	2012	replace in 2016
Ac10	2605621050	2005	9	2018	2025	disallow
Ac11	4290C17912	1990	24	2016	2010	replace in 2016
Ac12	2092G18683	1992	22	2016	2012	replace in 2016
Ac13	2405G51041	2005	9	2018	2025	disallow
	Building C					
Ac6	2405G41322	2005	9	2018	2025	disallow
Ac7	0298G10611	1998	16	2017	2018	replace in 2018

g. Project 99474- Increase Data Center Capacity and Support New Technology

CWS requests $244,669 to increase the company's data center capacity and allows support for the new technology projects to use its Data Centers. CWS stated that its San Jose (SJ) Data Center is at 70% capacity and its Rancho Dominguez (RD) Data Center is at 50% capacity. CWS states that at 70% capacity, the SJ Data Center is almost full and has insufficient space, power, and cooling to accommodate the company's technology growth after 2016. The project calls for installing high security and high density racks in

the SJ and RD data centers, reconfiguring floor tiles in SJ to provide better airflow and efficiency, and installing monitored power distribution units to monitor and manage data center power.

ORA reviews the need and the cost for this project and found them to be reasonable. However, since this project will help CWS to avoid the need to rent spot coolers three times a year at $1,500 per occurrence,[25] ORA recommends that CWS reduce $4,500 in its GO expense forecasts as a condition to approve this project.

h. Project 99477 – Implement Intrusion Protection and Detection on Corporate and SCADA Networks

CWS requests $344,605 to implement an Intrusion Prevention and Detection (IPD) system to monitor its corporate and SCADA networks for outside malware and attackers. CWS claims that its current monitoring process is manual and does not incorporate automatic blocking /remediation of potential intrusions. The current Security Event and Information Management System (SEIM) tool, QRadar, is used to provide alerts but is limited in its ability to prevent attacks. CWS states that the addition of an intrusion detection solution will provide better detection and prevention.

ORA believes CWS's current security tools (SEIM and QRadar) along with its IT staff have adequate resources to provide the network protection CWS needs. When asked by ORA for details about any security intrusion over the past 3 years, CWS provided the following response:[26]

> While there has been evidence from the current monitoring solution that an intrusion took place in June 2014 there has not been a solid way to track

[25] CWS response to Data Request VCC-002. Q6c.

[26] CWS response to ORA Data Request VCC-002,Q8d.

> intrusions through the current SEIM product. The current posture does not monitor and look for data loss. It is more than likely possible that data loss has occurred. 4 occasions a Cryptowall viruses hit Cal Water and moved through the network for some time before detection.

CWS describes its remedy for these problems as follows:

> For the Crytowall incidents the IT staff had to work long hours stopping the virus and using backup tapes to recover data. No data was lost, however, the infection in September 2015 was substantial and took 5 staff 7 business days to recover lost files.

Based on CWS's response, ORA believes CWS's resources to deal with outside intrusion threats are sufficient. There is no need for this project at this time. ORA, therefore, recommends that this project be disallowed.

i. Project 99778- Water Quality Lab Space Improvement Phase I

CWS requests $2,214,905 to expand its Water Quality Laboratory (Lab) in order to enhance its performance, productivity, safety, emergency response and customer service. The projects entails the followings:

- Expanding the shipping and receiving area by approximately 508 square feet.
  - Redesigned, expanded and organized into flexible common work spaces to accommodate at least 4 people simultaneously.
  - Centralized storage adjacent to shipping and receiving for efficiency.
- Expanding the administrative area/WQ lobby by approximately 200 square feet
  - Provides an administrative workroom for shared office equipment, a work/sorting table and mail handling.
  - Rearrange cubicles in the administrative area for better air circulation.
- Expanding the analytical work area/space by:
  - Creating cubicles for the scientist outside of main lab and to create more bench space for lab equipment and create a safer working environment away from chemical/biological agents.
  - Storing samples in the newly created sample storage area in the shipping and receiving room.

- Provide space for a larger fume hood in the inorganic chemistry section to accommodate current workload.

In October 2014, CWS contracted a laboratory consulting firm LCS Constructors, Inc. to evaluate whether to expand or relocate the Lab. The consulting firm provided four options for CWS to consider, as shown in **Table 2-K** below.

Table 2-K: CWS Lab Expansion Options

Option #	Project Description	Total Lab Space (Sq. Ft)	Capital Cost	Benefits	Disadvantages
1	Expand GO lab space into existing Engineering space	9000	$ 1,955,846	There are more options nearby for office space than laboratory space and relocation costs are significantly lower. Single lab may make operation easier	Involve taking space away from Engineering and will require moving at least 1/3 staff off campus
2a	Remodel current GO lab space	5500	$ 1,037,039	Cheapest option	Does provide space for future growth. Engineering would lose use of the vault and a small storage room.
2b	Construct Tubeway lab	5000	$ 2,055,499	Lab in So Cal would be good for disaster recovery	
3	Relocate entire lab to location within 1 mile of GO	12700	$ 2,788,266	Single lab may make operations easier	No presence of Water Quality Department on GO campus could reduce company focus on water quality
4a	Relocate portion of lab to	8000	$ 2,244,828	Lab in So Cal would be good for disaster recovery	No presence of Water Quality Department on GO campus could reduce company focus on water quality
4b	Construct Tubeway lab	5000	$ 2,055,499		

Of the four options recommended by the consulting firm, CWS chose Option 2a, which entails performing minor modifications to the existing lab as the most cost effective strategy to meet the current needs. This is part one of a two-phase plan. Part 2a of this plan addresses the inadequate space for the current needs. Part 2b of the plan would be addressed in future rate case to address future expansion needs.

Since the completion of the consulting report in October 2014, CWS has learned that there has been a change in the zoning requirement by the City of San Jose. The change in zoning requirement would allow CWS to expand the footprint of its building within the GO property. On page 190 of its CSS project justification, CWS states:

this option allows the Water Quality Department to continue to successfully implement the required monitoring programs of our 70 plus water systems while achieving regulatory compliance, enhancing water quality problem, solving and enhancing Public Health protection for the customers.

While expanding the current footprint on campus property is as viable as the four options recommended by the consultant, CWS has not provided the necessary supporting information, including but not limited to architectural plan, capital cost, zoning requirement and cost of out-sourcing the Lab's workload during construction. It is not possible for ORA to determine the most cost effective option without complete project description and costs for each of the available options. For this reason, ORA recommends that this project be rejected.

j. Project 100031- Upgrade Hyperion Software

CWS requests $1,615,335 to upgrade its Hyperion software that includes Hyperion Planning, Financial Data Management and Hyperion Strategic Finance. This same project was approved in the 2012 GRC but CWS put it on hold, because its Financial Planning and Analysis staff were not ready at the time. CWS decided it would be better for the staff to have a deeper knowledge of the existing Hyperion application before upgrading to a newer version. Additionally, CWS claims that the $400,000 approved for the project was not sufficient. CWS is now requesting about $1.6 million for this project in this GRC; the estimate is based on an e-mail from Ranzal Consulting.

Although the need for this project was established and approved by the Commission in the 2012 GRC, ORA has concerns over the large discrepancy between its estimate from the 2012 GRC ($400,000) and the new estimate ($1.6 million). With the new estimate 400% higher than the prior estimate, CWS either woefully under-estimated this project in the 2012 GRC, or over-exaggerated it in the current GRC. In order to protect the interest of CWS's ratepayers from either scenario, ORA recommends that this project be approved via Advice Letter filing with the amount capped at $1,615,335. CWS can seek recovery through a Tier II Advice Letter filing upon completing the project during this rate case cycle.

k. Project 102021- Enhance Rate Making Capabilities by Integrating the Budgeting and Rate Case Management System with Enterprise Asset Management System

CWS requests $1,057,000 to enhance its rate making capabilities by integrating the Budgeting and Rates Case Management system with the Enterprise Asset Management system. According to its project justification, this solution will automate rate case processes, and eliminate the need for complicated ad hoc queries, spreadsheets and manual processes that burden its regulatory team. CWS highlighted three areas that this project will deliver:

- Safety- Ensure the Company has adequate funding to support safety-related initiatives and programs through justifiable cases.
- Cost avoidance- Streamlines the budgeting processes throughout the Company- avoiding future increases in service costs. Improves the integrity of data used for financial analysis and trending, compliance reporting, and forecasting/budgeting.
- Risk management- Delivers the critical information required for SOX and SEC reporting, thereby avoiding significant penalties and legal actions against the Company.

ORA issued data request to CWS to obtain support for each of these justifications. CWS stated the following[27]:

> The safety-related initiative and programs mentioned in the justification is referring to safety and reliability of financial data used in the rate making models. With a reliable database, the risk of linking errors will be greatly decreased.

CWS highlighted some of the benefits this project will provide:

[27] CWS response to ORA Data Request VCC-002,Q11a.

- *"The GRC models (commonly used as work papers) used in filing Cal Water's general rate case are heavily reliant on Excel. It is comprised of massive work books with links to both internal and external data sources. Oftentimes, errors (both linking and calculation) go unnoticed for several rate cases. This poses a great risk to all parties (ORA, Cal Water and ratepayers) because tariff rates are solely dependent on the revenue requirement calculated in the work papers. With the implementation of the Regulatory Module, systematic links between Cal Water systems (PeopleSoft [General Ledger, Accounts Payable], PowerPlan [Work Order Systems, Capital Budgeting, Asset Management, Depreciation, Tax Provision and Deferred Income Taxes modules] and RMS/CC&B (billing system) which will eliminate excessive links in the workpapers resulting in a more accurate revenue requirement calculation.*
- *In addition, the Regulatory Module has a rate design suite that will eliminate linking and formula errors in calculating rates especially with the growing complexity of rate design with the implementation of both WRAM and SRM mechanisms. This will also avoid the inconsistencies of the rate design versions used for general rate case and advice letter filings.*
- *The Rates team is made of one director and seven analysts responsible for putting together Cal Water's general rate case, advice letter and other compliance filings, other applications and proceedings and routine regulatory reporting. The Rates team spends more than 90% of the time gathering the packaging information. Very minimal time is spent reviewing and analyzing data and related results which impacts the quality of the filings. Implementation of the module will not result in any cost savings but rather cost avoidance by not hiring additional Rates Analysts in the future also avoiding costly mistakes inherent in manual processes."*

CWS's response suggests that it would like to minimize the use of Excel as a tool to prepare for its rate case, because Excel requires a manual process that is susceptible to linking and calculation errors. However, as ORA discussed previously on Project 99348, Depreciation Forecast in PowerPlan, the use of Excel as a primary tool to prepare general rate cases is standard among all Class-A water utilities for many years. For many of

these companies and including CWS, human errors such as incorrect linking or wrong calculation using Excel do occur from time to time but should be minimized with the experience of each rate case. In many instances, many of the errors would be identified and corrected by ORA, resulting in a final outcome that is acceptable to the Commission. Moreover, the errors that CWS identified did not occur on a frequent basis. Over the last three general rate cases, CWS provided only one instance of linking error involved with the calculation of depreciation reserve in its Kern River Valley District in the 2012 GRC.[28]

The third justification CWS presented is that this system could deliver the critical reporting information required by SOX and SEC (Sarbanes-Oxley Act and Security Exchange Commission), thereby avoiding significant penalties and legal actions against the Company. When ORA requested CWS to provide the number of penalty of legal action relating to its SOX and SEC reporting due to the absence of such system, CWS provided a vague response, stating:

> CWS had been issued a significant deficiency by its external auditors due to an erroneous booking of the adopted MCBA ("Modified Cost Balancing Account") in 2009 after the WRAM/MCBA implementation in 2008. Though this deficiency had been mitigated without any penalties or legal actions by implementing additional SOX control procedures, there is always an inherent risk to CWS for errors arising from manual process.[29]

It appears that CWS is meeting the current SOX and SEC reporting requirements, because it has been more than six years since it was found to be deficient by its auditors, and there has never been any legal action or penalty imposed against the Company.

[28] CWS response to ORA Data Request VCC-001, Q6e.

[29] CWS response to ORA Data Request VCC-002, Q11c.

Currently, each of the eight Class-A water companies that file its rate cases with the Commission uses Excel for its workpapers. None of these companies, and perhaps even those outside of California,[30] is using this rate case module that CWS is proposing. The way CWS prepares for its rate case is neither unique nor special when compared to other water companies. As such, CWS's request for this project should be denied, unless it can provide a cost benefit analysis showing the benefit of this project outweighs the cost.

3. 2018 Specific Projects - Over $100K

CWS requests an overall amount of $26,829,185 for its proposed capital projects in the GO for 2018, whereas ORA recommends $5, 216,188. Table 2-B provided previously presents a summary of the GO related capital that ORA has either removed from CWS's plant additions or recommended a different amount than that proposed by CWS.

a. Project 97783- Routine IT Replacement

CWS requests $365,438 to replace obsolete computer equipment and accessories such as desktops, laptops, monitors, tablets and printers used by employees to perform various tasks within the CSS. CWS has adopted a PC Refresh Program in which it will replace a quarter of the hardware annually to control costs and provide support for essential business functions. Consistent with ORA's recommendation in Project 97777, CWS's request for this project should be reduced by 20% or $73,088, to $292,350.

b. Project 97786- Upgrade Phone System Architecture

CWS requests $839,889 to replace its current Inter-telephone systems with Mitel Axxess to MiVoice phone systems for its 24 districts offices to meet the telecom provider standard requirements. CWS states that the current phone system is over 10 years old

[30] CWS response to ORA Data Request VCC-002, Q 11d.

and has reached the end of its useful life (no longer supported by the vendor). In addition, the phone carrier AT&T will convert all existing phone lines to Session Initiation Protocol (SIP) to provide unified communication for voice, data, and streaming media by 2020.

ORA reviewed the need and cost estimate for this project and found them to be reasonable. However, since AT&T does not phase out its current technology until 2020 and CWS continues to receive third party support, ORA recommends that CWS implement this project in 2018 and 2019. CWS also acknowledged that the implementation of this project is not immediate but requires time for planning and coordination.[31] As such, ORA recommends CWS be allowed $419,945 per year for 2018 and 2019.

c. Project 98551- Southern California Office Interior Improvements

CWS requests $250,587 to replace its existing workstations and overall reconfiguration/remodel of its Southern Engineering office in Torrance. The improvements include the installation of 18 standard CWS workstations (four of the existing workstations will be re-utilized), the addition of centralized file cabinets and layout tables, construction of built-in centralized bookcases, new flooring, interior paint, and carpet replacement for the hallway and western stairway.

In its project justification, CWS stated that the existing engineering office contains older workstations of varying sizes and generally in poor condition. CWS states that the partition walls lack stability, the fabric overlay is faded and stained in areas, and the power distribution within some of the workstations is not functioning and requires the use of power strips and extension. The existing stations are low wall type and lack storage

[31] CWS Response to ORA Data Request VCC-003,Q2f.

and efficient space layout. The workstations, carpet and paint are estimated to be about 13 years old.

ORA conducted an office tour on September 24, 2015 and agreed with CWS's assessment regarding the condition of the office. However, there is no need to add additional work stations beyond the current need of 16, because CWS requests no additional engineering position in the current GRC. CWS has the option of adding more work stations in the Human Resources/Corporate Communications area[32] should such need arises in the future. To meet the current need, ORA recommends capital expenditure of $124,005 as shown in the following **Table 2-L**.

Table 2-L: Office Improvement Expenditure

Item	Qty	Cost	Note
New Work Stations	12	$51,600	Replace 12 @$4300/ea, use 4 exisiting stations
Electrical	1	$5,000	
Paint Walls	1	$5,000	
New Carpets	1	$18,319	
Professional Services	1	$16,209	
Subtotal		$96,128	
Overhead (29%)		$27,877	
Total		$124,005	

d. Projects 98730, 98733, 98944 - New Lab Equipment

CWS requests $406,611 for Project 98730 to purchase a new gas chromatograph/mass spectrometer (GC/MS) to replace a 2011 low level 1,2,3 trichloropropane, ethylene dibromide and dibromo-chloropropane system. For Project 98733, CWS requests $102,558 to purchase a new inductively coupled plasma to replace its 2008 metal analysis

[32]CWS Response to Data Request VCC-003, Q 3f.

instrument. For Project 98944, CWS requests $110,901 to purchase a new ion chromatography to replace its 2006 anion instrument. CWS's main justification is that each of these instruments has reached or exceeded its life expectancies of 7 to 10 years, based on an e-mail from the vendor's account manager.

In its response to ORA Data Request VCC-03, CWS stated that the GC/MS 1,2,3-Trichloropropane, 1,2-Dibromoethane,1,2-Dibromo-3-chloropropane instrument (Project 98930) was received in 2011 and placed into service in 2014, the ICP-OES EPA 200.7 instrument (Project 98733) was received in January 2009 and placed into service in March 2010, and the IC EPA 300 instrument (Project 98944) was installed in March 2006 and placed into service on June 2006.

Since CWS currently contracts with a vendor to provide maintenance and repair on these instruments, there is no need to replace the instrument earlier than the 10-year service life as recommended by the vendor. Accordingly, ORA recommends Project 98944 for $110,901 be approved, Projects 98730 for $406,611 and Project 98733 for $102,558 be rejected.

e. Project 99049- Precise Service Mapping in GIS

CWS requests $560,896 to provide precise service mapping in geographic information system (GIS). CWS stated that the precise mapping of services provides an exact location of the service point to assist field personnel in turning on/off services and performing meter reading. CWS stated that the service mapping in GIS will be integrated with Customer Information System (CIS) which currently has the records of the meters that are 2" and larger, or 7% of the total number of meters (550,251).

CWS identified the following issues with the current meter location processes:

- Inefficiencies in meter locating for meter reading, change-out or shutdowns.
- The service points in GIS are one critical element for Hydraulic Model integration with GIS and CIS integration with GIS. Without the service points in GIS the Hydraulic Model update process will remain a hard-hitting task.

- Due to limitations of the geocoding process there are some services that have been incorrectly located. This will pose a problem when notifying customers during emergencies or scheduled water main shutdown.

ORA acknowledges that the current process of meter routing or shut-down notification is less efficient compare to the GIS mapping. ORA also acknowledges that having all service points in GIS would provide better representation for hydraulic modeling of the water system. Implementing this project will allow CWS to address each of these issues, and most importantly, will provide annual cost savings estimated at $184,525, as provided by CWS in its response to Data Request VCC-03, 5f. The project will pay for itself in about three years. For this reason, ORA recommends that this project be approved with the condition that CWS reduces its GO expense forecasts by the same amount.

f. Project 99272- Replace SCADA Software and Hardware

CWS requests $4,693,605 for its GO as part of the second phase to replace its existing Supervisory Control and Data Acquisition (SCADA) system. According to CWS, the current SCADA system, which was initially installed in 1992, has been upgraded several times over the past 20 years, but will not be able to be updated further after 2014. In 2011, CWS hired Westin Engineering to assist in developing a SCADA Master Plan. CWS states that this plan has identified the need for CWS to replace its existing SCADA system, as well as a series of related projects designed to establish industry best practices for managing the SCADA. The scope of the overall SCADA replacement encompasses the six-year period from 2013 to 2018. The total expected cost of the SCADA, as shown in Appendix A of the SCADA Master Plan, is $37,332,595.

The price tag of $37,332,595 for the SCADA replacement project represents a significant capital investment for CWS. It is by far the most expensive SCADA system compared to the other Class-A Water Utilities regulated by the Commission. ORA performed an informal survey on several Class A water utilities and found their SCADA capital expenditures since installation were much lower compared to what is being proposed by CWS. The following **Table 2-M** and graph provides the result of the survey.

Table 2-M: Comparison of SCADA Capital Costs

BEGIN CONFIDENTIAL: GOLDEN STATE WATER DATA ONLY

Comparison of SCADA Capital Costs					
	Capital Cost	Cost /Revenue	Cost/Employee	Cost/Customer	
CWS (Proposed)	$37,332,595	6.73%	$37,634	$81	
Historical SCADA Cost Since Implementation					
CWS	$19,726,794	3.56%	$19,886	$43	
Golden State	[redacted]				Confidential
San Jose	$5,700,000	2.28%	$16,056	$26	
Suburban	$3,200,000	4.39%	$26,891	$42	
Park					
Note:					
1. Capital Cost includes SCADA upgrade and expansion as of 2014.					
2. Revenue, employee and customer numbers are based on 2014 data.					

END CONFIDENTIAL: GOLDEN STATE WATER DATA ONLY

Historically, CWS's SCADA expenditure has been similar to the other Class-A water utilities in California. As provided in table above, CWS spent about $19.6 million[33] for the entire system, including hardware and software upgrade since its installation in the 1990s. At 3.56% of its operating revenue, $19,886 per employee, and $43 per customer, CWS's SCADA historical expenditure is higher but remains around similar level of other water utilities in the survey. However, ORA is deeply concerned about CWS's new SCADA proposal which appears to be much more elaborate and expensive than its existing system. The initial capital cost alone is more than $37.3 million, and is nearly twice the amount of the total expenditure on its current SCADA system. It is nearly ***BEGIN CONFIDENTIAL*** [redacted] ***END CONFIDENTIAL*** higher than

[33] CWS response to ORA Data Request VCC-003, Q6a.

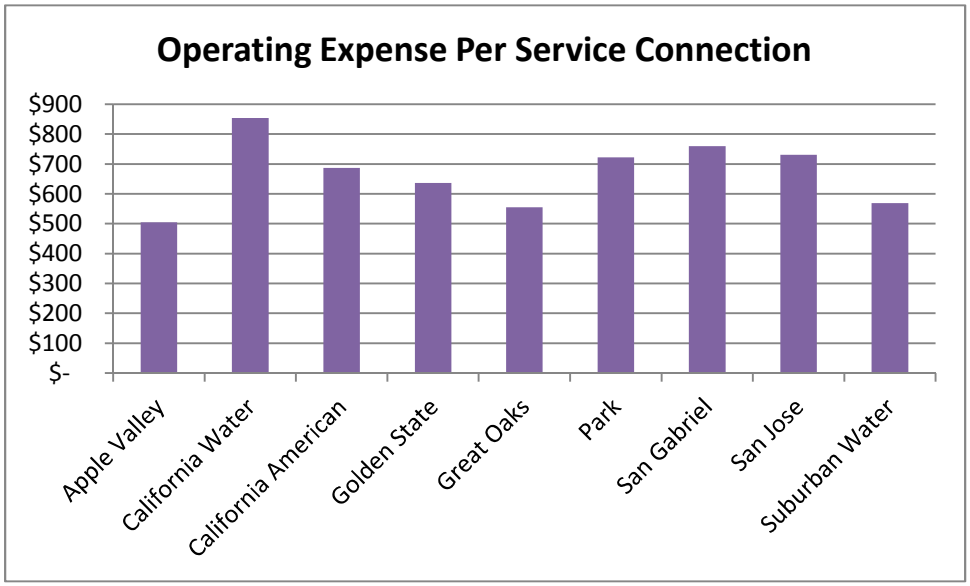
Golden State Water, the second largest multi-district Class-A water utility that provides water services in 18 customer service areas throughout California. CWS's proposed SCADA expenditure as a percentage of total operating revenue is nearly ***BEGIN CONFIDENTIAL*** [redacted] ***END CONFIDENTIAL*** higher than Golden State Water, ***BEGIN CONFIDENTIAL*** [redacted] ***END CONFIDENTIAL***higher as expenditure dollar per employee, and ***BEGIN CONFIDENTIAL*** [redacted] ***END CONFIDENTIAL*** higher as expenditure dollar per customer. It is difficult to understand how CWS's proposed SCADA system cost so much more than its existing system, as well as SCADA expenditures by other Class A water companies regulated by this Commission.

There is no question that an effective SCADA should help CWS control and optimize water production and delivery processes, thereby reducing operating and maintenance costs. In **Table 2-N** below, ORA compared the operating expenses of other Class-A water utilities with those of CWS, and found that for each service connection, CWS spent an average of $854 between 2012 and 2014, by far the most among all Class-A water utilities. If CWS is having difficulty controlling its operating expenses with its current SCADA, it is doubtful that a more expensive system, one that costs more than twice the amount of the current system, will be able to achieve the savings and efficiency claimed by CWS.

Table 2-N: Operation Expense per Service Connection

OPERATING EXPENSE per CONNECTION				
	2012	2013	2014	3-yr avg
Apple Valley	$ 518	$ 527	$ 468	$ 505
California Water	$ 842	$ 871	$ 848	$ 854
California American	$ 656	$ 681	$ 724	$ 687
Golden State	$ 661	$ 616	$ 631	$ 636
Great Oaks	$ 518	$ 565	$ 584	$ 555
Park	$ 728	$ 746	$ 692	$ 722
San Gabriel	$ 730	$ 739	$ 809	$ 759
San Jose	$ 694	$ 747	$ 750	$ 731
Suburban Water	$ 571	$ 570	$ 567	$ 569

Figure 2-F: Operating Expense Per Service Connection



CWS's proposed SCADA system is excessive and may not be cost effective. CWS's SCADA system should be comparable to the other water utilities in terms of functionalities and costs. CWS's current proposal needs to be revised to reflect this recommendation.

There is no question that a SCADA system has the potential to automate CWS's water system while providing efficiency and savings to its operation. In order to justify spending $37 million on a SCADA system, CSW must demonstrate a reasonable ROI can be achieved from the new SCADA implementation. It is not possible to determine if the money is well spent in the absence of a detailed cost benefit analysis.

In its 2012 GRC, CWS requested $5.1 million to begin the initial phase of this SCADA project. This initial phase is comprised of the following elements:

Table 2-O: Initial Phase of SCADA Project Approved in 2012 GRC

Initial Phase of SCADA Replacement Approved in 2012 GRC		
Task	Approved Budget	Up-to-Date Expenditure
Standard SCADA Project Development Methodologies	$ 89,000	$ -
Comprehensive SCADA Guidelines and Standards	$ 243,000	$ -
SCADA Change Management	$ 108,000	$ -
SCADA Disaster Recovery/Business Continuity	$ 108,000	$ -
HMI and PLC Vendor Agreements	$ 67,000	$ -
SCADA Cyber-Security Vulnerability Assessment		$ 350,000
Build Software Lab and Develop Software Library	$ 229,000	$ -
Pilot Project Implementation	$ 317,000	$ 350,000
Enterprise SCADA System Design	$ 2,852,000	$ -
Capitalized Interest at 6%	$ 240,780	
Overhead at 20%	$ 850,756	
Total	$ 5,104,536	$ 700,000

Note: Up-to-Date expenditures refer to CWS SCADA spending as of October 20, 2015.

Table 2-O shows that CWS completed only $700,000 or 13.7% of the $5.1 million approved for initial phase of this project.[34] One of the tasks in this phase is a pilot study at CWS's Dixon District that is being used to demonstrate the various elements of the proposed SCADA technology and industry best practices in its implementation. Once the pilot implementation is completed, an acceptance test would be performed by CWS to verify the system meets the functional requirements as agreed upon with vendor. CWS was supposed to provide a pilot evaluation report to the Commission as part of its support to implement the remaining phases of the SCADA project. However, CWS has not provided the pilot evaluation report as of the time ORA issues its testimony in this GRC.

To receive approval for this large scale SCADA project, CWS should first complete its pilot study at the Dixon District with a pilot evaluation report. CWS must also provide a

[34] CWS response to ORA Data Request VCC-003, Q6g.

detail cost benefit analysis showing that its proposed $37 million capital expenditure is cost effective. For the above reasons, the SCADA project should be denied at this time.

g. Project 99346- Development and Deployment of Statistical and Predictive Analysis Solutions

CWS requests $1,103,812 to provide enterprise reporting and analysis as part of its Knowledge & Information Management IT Program. According to CWS, this project will buy an application, design, build and test a new reporting infrastructure and integrations to/from source transaction systems (PSoft, SCADA, KloudGin, Maximo, etc.) capable of hosting both operational data and "big data" into a single repository or "Big Data Repository." The project includes the re-design of the existing Business Intelligence reporting data model, and merges the new CC&B data model together to ensure that the Big Data Repository data model is built at the lowest level appropriate.

Currently, there are no water utilities, public or private, in California that uses Big Data for their enterprise reporting and analysis.[35] If all of these utilities without this system can still provide safe and reliable water in an operating environment similar to CWS, there is no urgent need for CWS to acquire it. Also, CWS must be able to demonstrate a reasonable ROI to prove the project is cost effective. Once again, CWS did not perform a cost benefit analysis. For these reasons, ORA recommends that this project be denied.

h. Project 99395- Microwave Radio Network

CWS requests $1,229,524 to install an extensive microwave network consisting of nine individual microwave projects to allow inter-district communication and remote SCADA operations and troubleshooting. CWS claimed that it currently relies on telephone

[35] CWS response to ORA Data Request VCC-003, Q7c.

circuits as its primary means of communications between its district offices and the GO. Typically, these circuits are T1 lines and other higher bandwidth DS3 lines that are provided through Masergy. CWS's main issues with the current phone circuits are reliability and lack of bandwidth. CWS states that the lack of bandwidth is causing its network applications to slow down and will hamper additional applications over the existing network. CWS also claims that the reliability of the existing circuit through Masergy will be difficult to implement business applications such as SCADA.

To address the reliability and bandwidth issues of the current phone circuit, CWS has considered five alternatives, shown in **Table 2-P** below:

Table 2-P: Phone System Replacement Options

	Options	Pros	Cons
1	Second T1 circuit into office using the same carrier	increase reliability in the event of an equipment failure	increased expense for circuits and increased maintenance of additional equipment. No significant increase in bandwidth. Still reliant on single carrier.
2	Second T1 circuit into office using an alternative carrier	Increase reliability in the event of equipment failure or failure of single carrier.	increased expense for circuits and increased maintenance of additional equipment. Additional contracts to manage. No significant increase in bandwidth. Still reliant on single carrier.
3	Alternative communications circuit such as cable or DSL	Increased reliability	Increase expenses for circuits and increased maintenance of additional equipment. Additional contracts to manage. No significant increase in abndwidth. Capital costs can be high for locations where cable is not readily available.
4	Cellular based network connection into each office	Increased reliability. Low capital costs.	Increase expenses for circuits and increased maintenance of additional equipment. Additional contracts to manage. No significant increase in abndwidth.
5	Private radio network interconnection to each office	Increased reliability. Significant increase in abndwith.	High capital costs. Additional equipment to maintain.

CWS selected Option 5, private radio network interconnected to each office, as the best option to address the reliability and bandwidth issues.

In order to determine the most cost effective option, it is imperative for CWS to perform a cost benefit analysis for each option that is being considered. The cost benefit analysis, at a minimum, should provide details of the pros and cons, savings and cost for each of the options. In its analysis in the cost of each option, CWS only describes the costs in general terms such as "increased expenses," "increased maintenance," "high capital costs" or "additional contracts to manage." It is not possible for ORA to determine if CWS has selected the best or least cost option if a cost benefit analysis for each of the options has not been performed.

In CWS's prior GRC, A.12-07-007, ORA and CWS agreed to include two microwave link projects (Projects 67591 in Bayshore and 67593 in Salinas) for $177,104 to demonstrate that microwave radio technology is cost effective to meet CWS's need. Chapter 13, Appendix B of the Settlement states:

> In order to better demonstrate the benefits of the proposed microwave projects, Cal Water agrees to track the benefits of the two allowed projects and present those benefits in its next GRC filing as part of the justification for any future inter-district microwave communication projects. Cal Water will show how the two allowed projects will benefit the ratepayers by tracking communications outages and correlating those communications outages to loss of service and/or to down time in its operations.

CWS did not comply with the settlement terms and failed to present the results of the two demonstration projects as part of its justification in the current GRC.

Finally, since ORA is denying the new SCADA project in Project #99272, there is less need for the additional bandwidth and, consequently, no need for this project.

Given that CWS has not provided sufficient cost benefit analysis and information on the benefits of the demonstration projects, and there is also reduced need for bandwidth, ORA recommends that this project be denied.

i. Project 99440- Enhance Customer Portal and Call Center Operations

CWS requests $813,218 to improve its customer portal. The project is part of its continuous program to improve its customer portal which began in 2012. Thus far, CWS's objectives have been met for real time payment posting, paperless billing,

residential start and stop service, payment extensions, payment arrangements, set up communication preferences (phone, text, e-mail), and set up or edit automatic payment service. For this project, CWS would like to enhance its portal to include, water conservation tools, water focus reports, improve customer and CRS workflow, provide the same portal functionality on IOS and Android devices, and make it easier to integrate with advanced meter technology (AMI).[36]

CWS's request for this project is unnecessary and premature. It is unnecessary because CWS customers can already receive information on water conservation efforts and programs by accessing the company's web site (calwater.com). Conservation program information is included in bill inserts and bill messages. Customers can also contact CWS's Conservation Department directly through phone or email, or contact their local district offices for conservation program information. Additionally, customers are able to keep track of their water usage through their monthly bill by either mail or on-line if they are enrolled in CWS's Customer Portal. They can also view their usage history and water budget at usage.calwater.com and on the Customer Portal. Customer can also contact their local district offices to inquire about water usage.[37] In short, CWS's customers already have various ways to obtain information about their water usage and water conservation. The current portal is sufficient in providing water usage and conservation and additional enhancement is not necessary.

CWS's other justification for the portal is to provide portal functionality on IOS and Android devices and make it easier to integrate with AMI. This request is premature because there are currently less than 103, or 0.022% meters that are AMI configured, out of about 460,000 customers in CWS's service areas. Additionally, ORA recommends

[36] CWS response to ORA Data Request VCC-003, Q. 9k.

[37] CWS response to ORA Data Request VCC-003, Q.9b.

rejection of CWS's AMI requests in this GRC (see ORA's Report on Plant – Common Issues).

Finally, CWS has not provided a cost benefit analysis for this project. As part of its justification, CWS stated that this project would help to reduce customer service costs and reduce future cost increases by interfacing with AMR and AMI. However, CWS did not provide any analysis to support each of the claims.

For the reasons stated above, ORA recommends that this project be denied.

j. Project 99457- Complete Features and Functionality CC&B System

CWS requests $2,154,219 to complete the features of its Customer Care and Billing System (CC&B). As provided in its justification, CWS claimed that this project will result in optimization of customer service, and also includes 1) the re-design of the new business process (i.e. mainline extensions) functions in CC&B, 2) CC&B enhancements related to the customer portal, and 3) building the related functionality in CC&B (design, build, test including related interferences to replace the old existing Tokay System and additional security).

ORA recommends that this project be disallowed, because CWS has not provided a detailed cost benefit analysis for this project. CWS has identified that the implementation of this project would result in increased efficiency and cost savings but failed to provide an analysis to support its claim. ORA's Data Request VCC-03, Q.11e asks CWS to provide a cost benefit analysis for this project; CWS responded by stating:

> This project supports Tokay System equivalent features into CCB that will eliminate redundant data entry, improve the user interface, and allow Cal Water to stop paying Tokay an annual maintenance fee. Also, this project will reduce significantly the manual effort for completing various New Business forms for customer requested new main extensions. The project will also support identifying proficiently water utility facilities in need of repair or replacement and improve the customer portal experience.

CWS's response was too vague and generic to be considered an acceptable cost benefit analysis. Equally important, ORA is unable to evaluate whether the claimed incremental benefit over the current system justifies the additional expenditure by CWS.

In addition to the lack of support for its cost benefit analysis, the proposed new features of the CC&B system are unnecessary. In its response to Data Request VCC-03, Q. 11a, CWS explained that the current system, although less efficient, is able to handle similar work that the new features are designed to accomplish. For example, the addition of systematic New Business (i.e. mainline extension) administrative functions would replace the manual process of completing various forms associated with initial request for preparation of agreement for main extension, developing cost estimate and other proposed water service location data. CWS's response implied that it has a manual process in place to perform the mainline extension related work.

Another feature CWS is proposing for this project is the CC&B enhancements related to the customer portal. As per previous discussion on the customer portal enhancement project (Project 99440), ORA recommends this project be disallowed. As such, there is no need to add the portal enhancement feature for this project.

For reasons stated above, ORA recommends that this project be denied.

k. Project 99461- Asset Refurbishment and Replacement Systems

CWS requests $721,663 to implement an Asset Refurbishment and Replacement (ARR) System which builds on the Capital Asset Management (CAM) Decision Support System (DSS) that was initiated during the 2013-2015 time period. CWS stated that replacing or refurbishing assets is dynamic and the process to objectively identify which assets to replace at the right time for the right reason needs to be based on a structured, repeatable process via algorithm. This project refines the gathering of information from work orders necessary to complete the algorithms that identify asset candidates for either refurbishment or replacement. It also includes the integration of Maximo, CC&B, LMS (the sources of work orders), CAM DSS and GIS. The project includes purchase, design, build, test and implementation of water system modeling application/data deployment plan for a third of CWS's districts.

ORA does not believe this project is necessary at this time because CWS already has a system in place for asset refurbish and replacement. In its response to Data Request VCC-03, Q.12f, CWS states:

> Currently, Cal Water manually and reactively analyzes work order data for identifying water utility facilities in need of repair or replacement. Due to the inability to leverage a CAM system processing power and speed, when manually parsing through the work order data there are inherent inconsistencies on how the work orders are analyzed (regardless of having firm criteria) and delay due to volume.

CWS's response implied that the implementation of the ARR System would allow it to automate the process of refurbishing and replacing assets, resulting in cost savings and efficiency. However, since this manual process has been used by CWS for many years, it should not be hastily replaced unless the proposed alternative would result in greater savings and efficiency.

As ORA mentioned in prior discussions, a cost benefit analysis is critical in determining the cost effectiveness of a project. Here, CWS once again failed to make such showing for this project. In its response to Data Request VCC-03, Q.12g, CWS states:

> Although there was no cost benefit analysis done for this project, it is anticipated that this project will help avoid increasing costs associated with manually completing the analysis by utilizing various Enterprise level system data resources, to proactively identify and prioritize assets that need repair/replacement before failing.

The benefit as stated in CWS's response is both vague and general, making it impossible to determine if it is cost effective. ORA is equally skeptical of CWS's claims that "this project will help avoid increasing costs" when the company has admitted that no cost benefit analysis has been done for this project; this makes the alleged cost savings nothing more than unsubstantiated guess work. ORA, therefore, recommends that the project be rejected.

l. Project 99464- Integration of GIS and Water Modeling Application

CWS requests $721,663 to integrate the GIS and water modeling application. This project is part of the Enterprise Asset Management Program (EAM) as provided in its Integrated Technology Master Plan. CWS described in its Project Justification that the implementation of this project will provide a tool to help manage the useful life and costs of assets, including a visual display of the company's assets, where the assets are, what

work orders are being worked, their location, and the ability to see the asset's history tied back to Maximo work order detail.

In its response to ORA's data request, CWS explained in more practical terms how this project will help its operation by stating:

> This project will enable Cal Water to respond to water system outages and incidents by visualizing customer and system impacts in advance for quickly deploying field crews to investigate and help resolve in real-time. It will also support maintaining the value of capital expenditures by prioritizing facility rehab and replacement with asset management and system criticality.[38]

This project is not necessary at this time because CWS already has a system in place for responding to water system outages and incidents. It is unclear what benefit it would have by deploying field crews in real time based on customer and system impact. The current process of responding to system outages and incidents is sufficient as evidenced by the number of informal complaints filed against the company in CWS's response to Question H1 of the Minimum Data Request. In the response, not one single customer complaint in 2014 was related to service outage, which supports ORA's assessment that the current process is sufficient; it, therefore, should not be hastily replaced unless the proposed alternative would result in greater savings and efficiency.

As ORA mentioned in prior discussions, a cost benefit analysis is critical in determining the reasonableness of a project. Here, CWS did not perform such analysis, making it impossible to determine if the project is cost effective. ORA, therefore, recommends that the project be rejected.

[38] CWS response to ORA Data Request VCC-003, Q. 13a.

m. Project 99469- Purchase, Design, Build, Test and Implementation of Water System Modeling Application/Data Deployment Plan

CWS requests $996,326 to design, build, test and implement a water system modeling application/data deployment plan for a third of the CWS's districts. This project is part of the Enterprise Asset Management Program (EAM) as provided in its Integrated Technology Master Plan. In responding to VCC-03,Q.14, CWS provided an identical response as Project 99464 when asked to describe the project and how it would help CWS in its operation. CWS also did not perform a cost benefit analysis on this project. Therefore, ORA recommends that this project be disallowed for the same reason as discussed in Project 99464.

n. Project 99471- Complete Implementation of New LIMS System

CWS requests $1,130,965 to complete the implementation of a new Laboratory Information Management System (LIMS). The current vendor Lab Vantage Solutions is phasing out its support for the existing LIMS. In the 2012 GRC, the Commission authorized $643,600 to allow CWS to replace the existing LIMS; CWS is in the process of completing this replacement. In this GRC, CWS requests an additional $1,130,965 to integrate the new LIMS with its existing Mobile Workforce Management System. CWS states that this will allow the field personnel to submit and upload sample data from the field via mobile technology to the new LIMS, rather than emailing hand written hard copy scans, which is then required to be manually entered. According to CWS, this manual process has higher potential for errors, and, therefore, will not allow its field personnel to submit and upload sample data efficiently.

ORA is not opposed to CWS's desire to automate its manual process of submitting and uploading sample data from the field, because such effort should provide efficiency in the form of labor savings. What CWS once again failed to provide is the measurable benefit that would result from implementation of this project. Project benefit such as labor savings, time savings, reduction in error rate, and project payback time frame should be provided as part of the cost benefit analysis to support the reasonableness of this project. In its response to ORA Data Request VCC-03, Q.15f, CWS simply stated:

> This project supports avoiding increasing costs for manually completing (through hand-written forms) the collection in the field of water analysis data, and the manual processing, storage and reporting of the data by Water Quality to the Department of Public Health.

Although, CWS articulated the various potential benefits, CWS failed to quantify the benefits for this project. Therefore, ORA recommends that the project be rejected.

o. Project 99472- Integration of Enterprise Workforce Management System

CWS requests $2,692,744 to integrate its Enterprise Workforce Management as part of its Enterprise Asset Management Program identified in its Integrated Technology Master Plan. In its project justification, CWS explained that this project will allow it to upgrade and integrate the mobile dispatch and routing system. This system replaces paper work orders used to dispatch work to field employees with electronic work orders. It removes the need for manual data entry and offers real time integration with the GIS, payroll, inventory, and vehicle mileage applications. An employee can complete his work electronically, record the time spent on the job, report the parts used for the repair, and submit the vehicle miles driven for the job all on the same mobile app. It improves efficiency, productivity, and the user experience for the field employees.

ORA is not opposed to CWS's desire to automate its mobile dispatch and routing system and agrees that such effort should provide efficiency, productivity, and better user experience for its field employees. What CWS once again failed to provide is the measurable benefit that would result from the implementation of this project. Project benefit such as labor savings, time saving, improved productivity, and project payback time frame should be provided as part of the cost benefit analysis to support the reasonableness of this project. In its response to ORA Data Request VCC-03, Q.16e, CWS simply stated:

> This project supports avoiding increasing costs associated with manually completing the analysis, utilizing various Enterprise level system data resources, to proactively identify and prioritize assets that need repair / replacement before failing.

Since CWS is not able to quantify the project benefits for this project, ORA recommends that the project be rejected.

p. Project 99482- Rates Compliance Software

CWS requests $102,034 to purchase software for its Rates Department to be used in its rate case process. CWS's justification for this project is that since all written communication is by email and the use of shared folders, significant amount of information are only known and accessible to those who were directly involved in the email exchanges, and the person who downloaded documents to a folder. Other Rates Department members are not quickly notified of the status of communication changes or document drafts. CWS states that much time is spent trying to identify the one or two people who have the relevant information. Each person uses different tools to track deadlines, name documents, and follow-up action items.

This project is unnecessary because the problems described by CWS appeared to be related to its work process. CWS can address the problem through better communication, coordination and training within the department. There is already collective wisdom and knowledge within the organization on how to improve this work process. CWS should take advantage of this valuable resource before implementing a solution that requires more ratepayer investment. If CWS still believes this software tool is necessary after such effort, it must be able to demonstrate an acceptable return on investment for this project in its future request.

ORA recommends that this project be rejected.

q. Project 99485- Update Devices, Services and Databases

CWS requests $1,308,422 to renew its existing software licensing agreement with Microsoft. The existing agreement is for a three-year term and will expire in 2017.

ORA agrees with the justification for the need of this project but disagrees with the cost estimate. CWS's estimate is based on its forecast of $400,000 per year for three years, for a total of $1,200,000. It adds $108,422 as escalation to arrive at a total cost of $1,308,422. ORA recommends that the cost be based on $1,025,000, the recorded expenditure for the 2014 licensing renewal, plus 2.5% annual escalation, to arrive at a total cost of $1,131,408.

ORA's estimate is more reasonable because it is based on actual expenditure of CWS's most recent licensing renewal with Microsoft. The Commission should adopt ORA's recommendation of $1,131,408 for this project.

r. Project 99487- Implement Enhancements to MS Project Server

CWS requests $323,133 to establish a Program Management Office (PMO) for all of its technology programs/projects to strengthen the links among governance, project portfolio management, and services development and delivery. A PMO is a group or department within a business, agency or enterprise that defines and maintains standards for project management within the organization. CWS states that the PMO strives to standardize and introduce economies of repetition in the execution of projects. The PMO is the source of documentation, guidance and metrics on the practice of project management and execution. In short, according to CWS, the goal of a PMO is to help CWS to better manage its projects and allow it to deliver them on time and within budget.

ORA is concerned about the uncertainty in the implementation of this project. CWS has not made an economic case showing the expenditure of $323,133 on this project is cost effective. Project benefit such as labor savings, time saving, improved productivity, and project payback time frame should be provided as part of the cost benefit analysis to support the reasonableness of this project. When requested to provide a cost benefit analysis for this project, CWS responded by stating:

> A project scheduling tool that can roll up projects is considered a basic tool of a PMO and helps the PMO to assist project managers manage their triple constraints of time, cost, and quality/scope.[39]

CWS' response implied that the PMO is a standard tool required by all project managers in order to control time, cost, and quality.

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[39] CWS response to ORA Data Request VCC-003, Q20f.

ORA disagrees with CWS's assertion that a PMO is a standard tool across the industry for project management. In a 2014 webinar on the Disturbing Reality of Today's PMO presented by KeyedIn Projects, a cloud-based software company, five surprising PMO statistics were presented:

- 50% of project management offices close within 3 years (Association for Project Mgmt)
- Since 2008, the correlated PMO implementation failure rate is over 50% (Gartner Project Manager 2014)
- Only a third of all projects were successfully completed on time and on budget over the past year (Standish Group's CHAOS report)
- 68% of stakeholders perceive their PMOs to be bureaucratic (2013 Gartner PPM Summit)
- Only 40% of projects met schedule, budget and quality goals (IBM Change Management Survey of 1500 execs)

These troubling statistics illustrate that the implementation of a PMO is not a guarantee for success, and could be costly to the company if it is not executed properly. This is the reason that CWS needs to perform a cost benefit analysis before implementing this project.

Finally, CWS currently has many highly skilled employees that have been trained to manage its capital projects. CWS also has software applications, such as MS Project Server, that can assist the project managers plan and deliver projects on time and within budget. As such, ORA does not see a need to implement a PMO within the company at this time. ORA recommends that this project be rejected.

s. Project 101814- Statewide Digital Radio System

CWS requests $1,643,307 to create a statewide digital radio system. This radio based communication system will be used to support day to day district functions and provide an uninterruptible communication medium for use during emergencies. CWS claimed that the proposed system will provide better signal coverage, data transmission, and serve

as a reliable backup in an emergency situation over its existing analog radio system and cellular technology.

To support the need for this project, CWS cited several reasons that its existing radio system is inadequate. On page 420 of its Project Justification, CWS stated:

> California Water's 21 district offices are located in both major metropolitan areas and extremely rural settings. When considering the company's response to cataclysmic events, i.e. a major earthquake, flood, wildfire, etc., it is critical to consider how districts will coordinate their response and support efforts. A robust communication medium is essential for an effective coordination effort. It should be noted that communication and coordination were elements severely lacking during the Oakland Hills Fire, Loma Prieta Earthquake, and the World Trade Center attack." CWS explained that "These events were noted to demonstrate how important communication and coordination are during catastrophic events. This information was not intended to indicate that Cal Water was specifically involved in these events."[40]

CWS's response indicates that there was no issue with its communication medium in each of these events. Even if it did, CWS has an emergency procedure in place for each of its district. All supervisors, managers and staff have taken training to deal with emergency scenarios such as those provided here.

Another reason CWS used to justify this project was the "lessons" it learned from the winter storm event in December 2014. CWS stated:

> While communication was available via analog telephone lines, one of the significant "lessons learned" was that company personnel did not have the ability to communicate effectively via radio should telephone or cellular service fail. The exercise clearly showed that the radio system was woefully inadequate to communicate effectively between districts, coordinate resource requests through the CSS, and communicate internally at the district level.

[40] CWS response to ORA Data Request VCC-003, Q21a.

While claiming the radio coverage as spotty, CWS acknowledged that both of its cell and landline coverage were available, which might not be available should an earthquake or flood event was to occur.[41] Once again, CWS's justification shows that the current system is adequate during an the emergency scenario it described and its claim that cell phone coverage will be lost in an earthquake or flood event is not supported. CWS presented no data or analysis showing the landline or cell technology would be inadequate in such event.

Finally, CWS identified employee safety as another reason it needs a new radio system. On page 421 of its Project Justification, it stated:

> It has determined that a key component is to strengthen its ability to communicate and coordinate between districts and the CSS and ensure the safety of its employees working alone as required by the Occupational Safety Health Administration (OSHA).

CWS also cited OSHA regulation (29 CFR 1926.800) as support for the new phone system.

OSHA regulation (29 CFR 1926.800) states simply:

> Any employee working alone underground in a hazardous location, who is both out of range of natural unassisted voice communication and not under observation by other persons, shall be provided with an effective means of obtaining assistance in an emergency.

ORA has learned that CWS employee, as a matter of company procedure, does not work alone in a hazardous location. In an event of an emergency, each employee has a cell phone that he can call for assistance. Currently, a cell phone, telephone, or paging system is considered an "effective mean" to meet the requirement of the OSHA requirement. The OSHA regulation does not support the need for the new radio system

[41] CWS response to ORA Data Request VCC-003, Q21b.

Currently, there is no mandate by any regulatory entity to require the deployment of this type of radio system. To the best of ORA's knowledge, there are no water utilities, public or private, in California that currently has such radio system.

For reasons stated above, ORA recommends that this project be disallowed.

4. Specific Projects (2016 to 2018) - Less Than $100K

a. Projects 98135, 98146, 98148, 98170, 98175, 98179, 98210, 98211, 98213, 98216, 98221, 98223, 98231, 98238, 98240, 98250, 98419, 98421, 98757, 99315, 99385, 99386, and 99392

Each of the projects listed above has a budget of less than $100,000. In the current filing, CWS provided a budget for each of the projects but without any support on how the estimates were derived. CWS was requested to provide detail support for its estimates in Data Request VCC-007. In its response, CWS stated: "*Cost estimates are calculated based on past purchases with a 2.5% increase each year for inflation plus overhead.*"[42] CWS's response is not acceptable because each cost estimate must be properly supported with verifiable data. At a minimum, CWS should show ORA how it arrived the total cost of the project based on the past expenditure, escalation and overhead, which it is the same process it has done for its capital projects over $100,000. ORA is unsure why CWS is not able to provide the same for these projects when requested by ORA.

Since CWS failed to provide proper support for its cost estimate for these projects, ORA recommends that they be disallowed.

[42] CWS response to ORA Data Request VCC-007, Q4.

b. Project 98151- Procure GPS Units and Accessories

CWS requests $23,466 in 2016 to procure GPS units and accessories. ORA agrees with the need for the project but recommends adjustment be made to the cost estimate. Based on ORA's calculation, the total price for the project is $17,608, based on vendor quote ($15,907), 4% overhead ($660) and one year escalation of 2.5% ($429).

c. Project 98542- Engineering Conference Room Improvements

CWS requests $38,112 in 2016 modify its existing conference room to accommodate its engineering group in Torrance. ORA agrees with the need for this project but recommends adjustment be made to the cost estimate. ORA recommends that the cost for painting ($1,000) and carpet replacement ($1,629) be removed since the same items are already included in Project 98551. The total cost of the project will be $39,879 based on base cost ($30,327), 29% overhead ($8794), and one year escalation of 2.5% ($758).

d. Project 98556- Data Recorders

CWS requests $55,544.96 in 2016 to purchase flow, pressure and control valve recording equipment with wireless connectivity. ORA agrees with the need for this project but recommends adjustment be made to the cost estimate. ORA recommends that the 10% contingency be removed from the cost since the project is comprised of purchase items only. The revised cost for this project is $49,262 based on the base cost ($46,213), 4% overhead ($1,848), and one year escalation ($1,201).

e. Projects 8766, 98767, and 98768 – EMT Tools

These projects have been cancelled per Darin Duncan of CWS during the General Office district tour on September 3, 2015.

f. Project 99027- Hydrogen Generator

CWS requests $18,510 in 2018 to purchase a hydrogen generator to replace the use of helium gas for its lab. The project would result in an annual savings of $13,000 from not having to purchase hydrogen gas. ORA agrees with the justification of the project but

recommends that CWS pass the savings to its ratepayers by reducing the $13,000 in its GO expense forecast in 2018.

g. Project 99306- Postal Scale Replacement

CWS requests $8,741 in 2016 to replace its existing postal scale in the GO mailroom. ORA agrees with the need for the project but recommends adjustment be made to the cost estimate. Based on ORA's calculation, the total price for the project is $2,393, based on vendor quote ($2,245), 4% overhead ($90) and one year escalation of 2.5% ($58).

h. Project 99310- Folding Machine Replacement

CWS requests $27,999 in 2017 to replace its existing folding machine in the I.T. Publishing room. ORA agrees with the need for the project but recommends adjustment be made to the cost estimate. Based on ORA's calculation, the total price for the project is $15,288, based on vendor quote ($14,000), 4% overhead ($560) and one year escalation of 2.5% ($728).

i. Project 99422- Facility Management Software

CWS requests $24,164 in 2016 to purchase a facility management software to track, plan and/or manage facility related activities or assets. This project is unnecessary as CWS is using Excel spreadsheets or Word documents to do the same job.[43] ORA recommends that this project be disallowed.

j. Project 99459- Design and Enhanced CWS Website

CWS requests $96,920 in 2017 to design and implement an enhanced CWS website to provide customers with updates on water usage, current and past water bills, current or

[43] CWS response to ORA Data Request VCC-007.

planned outages, and the status of service requests. The goal of this project appears to be duplication to that in Project 99440, in which CWS plans to enhance its customer portal, call center operations and water conservation efforts. ORA recommends that this project be disallowed for the same reason that ORA discussed under Project 99440.

k. Project 99489- Key Management System

CWS requests $52,531 in 2016 to develop a tool and process to manage its keys for all of its facilities. CWS claimed that this project will consolidate all physical key management activities and deliver a centrally managed key management system to be used by all of its facilities. CWS has not provided the support showing the current process of managing its keys is deficient. ORA recommends that it be disallowed.

l. Project 99679- WQ Copier

This project has been cancelled per CWS's response to Data Request VCC-007, question 4.

m. Project 99961- New Vehicle

CWS requests $34,842 in 2016 to purchase a new vehicle for its Corporate Communication Department. ORA is unsure if this request is for a new vehicle or for a replacement vehicle since no vehicle information (Vehicle #, mileage, make and model) was provided in response to ORA's Data Request VCC-07. If the request is for a new vehicle, ORA recommends that it be disallowed since pool vehicles are available to the department staff. In the event none are available, staff can drive their own vehicle and receive mileage reimbursement from the company. If the request is for a replacement vehicle, CWS failed to provide the necessary vehicle information for review. In either case, CWS's request should be denied.

5. Non-Specific Budgets for 2016 to 2018

CWS requests $1,544,200 in 2016, $1,580,800 in 2017, and $1,616,800 in 2018 for a total of $4,741,800 in the Non-specific Budget to address unforeseen, unplanned, and

emergency projects and regulatory compliant projects. ORA's Report on Plant - Common Issues presents ORA's recommended total disallowance of this budget.

6. 2015 Capital Budget

CWS requests approximately $31,701,000 for plant additions in 2015, which consist of projects authorized for 2015 in the last GRC and projects authorized from previous GRCs. ORA's Report on Plant - Common Issues presents its analysis and basis for adjusting the 2015 capital additions for General Office.

7. Allocation

CWS allocates its GO expenses and rate base to its operating districts after allocating 1.19% of its expenses and 0.53% of its rate base to the out-of-state subsidiaries. The remaining expenses and rate base are being allocated using the four-factor method to CWS's 23 operating districts in California. The four factors used are: 1) the ratio of gross utility plant in each district to the gross utility plant for all districts; 2) the ratio of the district's payroll expenses to the total payroll expense for all districts; 3) the ratio of number of active service connections in the district to the total number of active service connection in the company; and 4) the ratio of the district's direct O&M expenses to the total O&M expenses of all districts. Each factor is given equal weight.

CWS's allocation percentages are based on the most recent review of these expenses, using end of year 2014 data. Both ORA and CWS use this method and produce the same resulting factors, shown in following **Table 2-Q.**

Table 2-Q: Allocation Factors

Summary of 4-Factor	
DISTRICT	4-Factor
BK	**14.73**
BAY	**9.60**
BG	**5.85**
CH	**5.62**
DIX	**0.59**
ELA	**6.04**
HR	**4.92**
KC	**0.66**
LIV	**3.21**
LAS	**4.28**
MRL	**0.88**
ORO	**1.05**
PV	**6.07**
SLN	**6.07**
SEL	**1.16**
STK	**7.74**
VIS	**7.17**
WLK	**2.37**
WIL	**0.55**
AV	**0.51**
SO-BAY	**8.93**
KRV	**1.19**
R.V. - LUC	**0.54**
R.V. - COS	**0.09**
R.V. - UNI	**0.15**
GRAND OAKS	**0.03**
TOTAL	**100.00**

Note: Grand Oaks is excluded from this GRC and treated as a stand-alone Class D water company.

8. Working Cash Allowance

CWS's working cash allowance is developed based on the Commission's Standard Practice U-16 lead-lag method. CWS completed its last lead-lag study in 2011. In that study, certain corporate balances and expenses were analyzed on a company-wide basis, while those that pertain to a specific district, such as revenues, purchased water, purchased power, ground water extraction charges, and taxes, were analyzed separately. ORA agrees with CWS in using the same lead-lag days from the 2012 GRC, authorized by D.14-08-011, to estimate CWS's working cash in this GRC. ORA further

recommends that CWS provide a new study to the working cash calculation in its 2018 GRC.

D. CONCLUSION

ORA's recommendations presented above have been incorporated in the calculations for ORA's estimated Common Utility Allocation shown in Table 9-1 in its Company-Wide Report on Results of Operations, Appendix RO.